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Canadian Iron Ore Industry Statistics

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# CANADIAN IRON ORE INDUSTRY STATISTICS 1971-72

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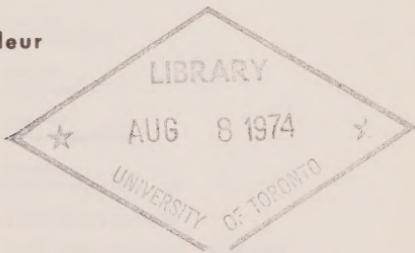


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Canadian  
Iron Ore Industry  
Statistics, 1971-72

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## PREFACE

This bulletin was prepared to continue the Canadian iron ore industry statistics series that was developed for the Mineral Information Bulletin published from 1955 through 1970. The statistical data supplements the Iron Ore chapter of the Canadian Minerals Yearbook.

All data were supplied to Mineral Development Sector by the Canadian iron ore industry whose co-operation is greatly appreciated.

November 1973.



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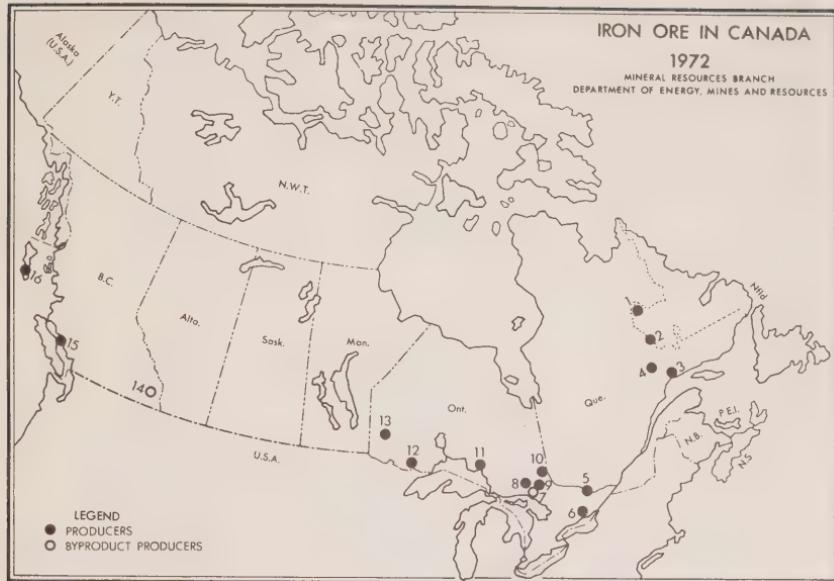
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1971 STATISTICAL REVIEW;

BY COMPANY





**PRODUCERS**  
(numbers refer to numbers on map)

1. Iron Ore Company of Canada (Schefferville)
2. Iron Ore Company of Canada (Labrador City)
3. Scully Mine of Wabush Mines (Wabush)
3. Pointe Noire Division of Wabush Mines (Pointe Noire)
4. Quebec Cartier Mining Company (Gagnon)
5. The Hilton Mine (Shawville)
6. Marmoraton Mining Company, Division of Bethlehem Chile Iron Mines Company (Marmorat)
7. National Steel Corporation of Canada, Limited (Capreol)
8. Sherman Mine of Dominion Foundries and Steel, Limited (Temagami)
10. Adams Mine of Dominion Foundries and Steel, Limited (Kirkland Lake)
11. Algoma Ore Division of The Algoma Steel Corporation, Limited (Wawa)

12. Caland Ore Company Limited (Atikokan)
12. Steep Rock Iron Mines Limited (Atikokan)
13. The Griffith Mine (Bruce Lake)
15. Texada Mines Ltd. (Texada Is.)
16. Wesfrob Mines Limited (Moresby Is.)

**BYPRODUCT PRODUCERS**

7. Falconbridge Nickel Mines Limited (Falconbridge)
  - a. Pyrrhotite Plant
  - b. Iron-Nickel Refinery
13. The International Nickel Company of Canada, Limited (Copper Cliff)
14. Cominco Ltd. (Trail)

Figure 1

TABLE 1

CANADA, IRON ORE PRODUCERS<sup>1</sup>, 1970 AND 1971

Company and Property Location	Participating Companies	Material Mined and/or Treated (% Fe natural)	Product Shipped (% Fe dry)	Shipments '000 long tons) 1971
Adams Mine; Boston Twp., near Kirkland Lake, Ont.	Dominion Foundries and Steel Ltd. (Adams Mine, acquired from Jones & Laughlin Mining Company, Ltd. July 30, 1971); managed by Cliffs of Canada Limited, a wholly-owned subsidiary of the Cleveland-Cliffs Iron Company	Magnetite from open pit	Pellets (65)	1,173 1,036
Algoma Ore Division of The Algoma Steel Corp., Ltd.; mines and sinter plant near Wawa, Ont.	Wholly owned	Siderite from open pit and underground mines (33)	Siderite sinter (50)	1,529? 1,628?
Caland Ore Co. Ltd.; E. arm of Steep Rock Lake, near Attikokan, Ont.	Inland Steel Co.	Hematite and goethite from open pit mine (54)	Pellets (63) Concentrate (59)	1,086 1,057
Coast Copper Co., Ltd. <sup>2</sup> ; Benson L., northern Vancouver Is., B.C.	Cominco Ltd.	Chalcopyrite and magnetite from underground mine (30)	Magnetite con- centrate (65)	859 612
Griffith Mine, The; Bruce Lake, 35 miles south of Red Lake, Ont.	The Steel Co. of Canada, Ltd.; managed by Pickands Mather & Co.	Magnetite from open pit mine (32)	Pellets (66)	77 -
Hilton Mine, The; near Shawville, Quebec, 40 miles NW of Ottawa	The Steel Co. of Canada, Ltd., 50%; Jones & Laughlin Steel Corp., Pickands Mather & Co. (managing agent), 25%	Magnetite from open pit mine (36)	Pellets (67)	1,030 869

TABLE 1 (cont'd)

Company and Property Location	Participating Companies	Material Mined and/or Treated (% Fe natural)	Product Shipped (% Fe dry)	Shipments ('000 long tons) 1970	Shipments ('000 long tons) 1971
Iron Ore Company of Canada 1. Schefferville, Que., operation	Labrador Mining and Exploration Co., 4.73%; Hollinger Mines Ltd., 10.17%; The Hanna Mining Co. (managing agent), 26.37%; Arcelor Steel Corp., 5.87%; Bethlehem Steel Corp., 18.80%; Youngstown Sheet and Tube Company <sup>5</sup> , 5.87%; National Steel Corp., 17.62%; Republic Steel Corp., 5.87%; Wheeling-Pittsburgh Steel Corp., 4.70%	Hematite-goethite-limonite from open pit mines (54)	Direct-shipping ore (59)	7,625	5,922
2. Carol Lake, Labrador operation <sup>6</sup>		Specular hematite and some magnetite from open pit mines	Pellets (65) Concentrate (65) 1,948	10,535	9,476
Marmaraton Mining Co., Division of Bethlehem Chile Iron Mines Company; near Marmaraton, Ont.	Bethlehem Steel Corp.	Magnetite from open pit mine (21e)	Pellets (65)	465	474
National Steel Corporation of Canada Ltd., Moose Mountain Mine; Sudbury area, 20 miles north of Capreol, Ont.	National Steel Corp. (The Hanna Mining Co. is the managing agent)	Magnetite from open pit mine (33)	Pellets (64)	663	681
Quebec Cartier Mining Co.; Gagnon, Quebec	United States Steel Corp.	Specular hematite from open mine (33)	Specular hematite concentrate (66)	8,870	7,864

TABLE 1 (cont'd)

Company and Property Location	Participating Companies	Material Mined and/or Treated (% Fe natural)	Product Shipped (% Fe dry)	Shipments ('000 long tons) 1970
Sherman Mine; near Temagami, Ontario	Dominion Foundries and Steel, Limited, 90%; Temagaya Mining Company (wholly-owned subsidiary of the Cleveland-Cliffs Iron Company), 10%. The operation and management of the mine is by Cliffs of Canada, Limited, also a wholly-owned subsidiary of the Cleveland-Cliffs Iron Company	Magnetite from open pit mines (25)	Pellets (65)	914 1,026
Steep Rock Iron Mines Ltd.; Steep Rock Lake, N. of Atikokan, Ont.	Publicly-owned company	Hematite-goethite from open pit mine (51)e	Concentrate (59) Pellets (63)	47 1,435 1,411
Texada Mines Ltd.; Texada Island, B.C.	Kaiser Aluminum and Chemical Corp.	Magnetite and chalcopyrite from underground mines (34)	Magnetite concentrate (66)	467 512
Wabush Mines; Scully Mine includes mine and concentrator at Wabush, Labrador; Pointe Noire Division includes pelletizing plant at Pointe Noire, Que.	The Steel Co. of Canada, Ltd., 25.6%; Dominion Foundries and Steel, Ltd., 16.4%; Youngstown Sheet and Tube Company <sup>5</sup> , 15.6%; Inland Steel Co., 10.2%; Interlake, Inc., 10.2%; Wheeling-Pittsburgh Steel Corp., 10.2%; Finsider of Italy, 6.6%; and Pickands Mather & Co. (managing agent), 5.2%	Specular hematite and some magnetite from open pit mine (31)	Pellets (66)	5,478 5,597

TABLE 1 (cont'd)

Company and Property Location	Participating Company	Material Mined and/or Treated (% Fe natural)	Product Shipped (% Fe dry)	Shipments 1970 1971
Wesfrob Mines Limited; Tasu Harbour, Moresby Is., Queen Charlotte Is., B.C.	Falconbridge Nickel Mines Limited	Magnetite and chalcopyrite from open pit mines (39)	Pellet-feed con- centrate (70) Sinter-feed con- centrate (61)	727 604 370 528
<b>BYPRODUCT PRODUCERS</b>				
Cominco Ltd.; Kimberley, B.C.	Publicly-owned company	Pyrrhotite flotation concen- trates roasted for acid pro- duction; calcine sintered	Iron oxide sinter (65) is processed into pig iron at plant	477 1467 82
Falconbridge Nickel Mines Ltd., Falconbridge, Ont.	Publicly-owned company	Pyrrhotite flotation concen- trates treated	Calcine (67)	63
The International Nickel Co. of Canada, Ltd.; Copper Cliff, Ont.	Publicly-owned company	Pyrrhotite flotation concen- trates treated	Pellets (67)	667e 796
Quebec Iron and Titanium Corp.; mine at Lac Tio, Que.; electric smelter at Sorel, Que.	Kennebott Copper Corp.; Gulf & Western Industries Inc. (The New Jersey Zinc Co.)	Ilmenite-hematite ore (40% Fe, 35% TiO <sub>2</sub> ) from open pit mine at Lac Tio, beneficiated and calcined at Sorel	Calcine smelted by electric smelting to TiO <sub>2</sub> slag, and various grades of de- sulphurized pig iron or remelt iron	1,571 <sup>b</sup> 1,580 <sup>a</sup>

Sources: Company reports, personal communications and others.

<sup>1</sup> Exclusive of Craigmont Mines Limited which ships magnetite byproduct concentrate to Western Canada coal preparation plants; <sup>2</sup> Including 626,000 tons of superfluxed sinter, and 1,695 tons of crude ore shipped to the U.S.A. to be used as a food supplement in the livestock industry; <sup>3</sup> Comprising 1,539,648 tons of superfluxed sinter, 86,393 tons of regular sinter and 2,237 tons of crude ore shipped to the U.S.A. to be used as a food supplement in the livestock industry;

<sup>4</sup> Iron recovery plant no longer operating; <sup>5</sup> Operating subsidiary of Lykes-Yonceton Corporation; <sup>6</sup> The assets of the Carol Pellet Company, which was established to pelletize concentrates produced by IOC, were acquired by IOC on December 31, 1970; <sup>7</sup> Sinter consumed in pig iron production; <sup>8</sup> Ilmenite calcine smelted.

e Estimated; - Nil.

TABLE 2

## CRUDE IRON ORE MINED IN CANADA, BY VARIETY AND GRADE, 1971

	Hematite		Magnetite		Siderite	
	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.
Newfoundland						
Iron Ore Company of Canada (Carol Operation)	24,962,700 <sup>1</sup>	38.4	—	—	—	—
Wabush Mines	17,751,094	32.94	—	—	—	—
Labrador-Quebec						
Iron Ore Company of Canada (Schefferville)	6,920,791	54.352	—	—	—	—
Quebec						
Hilton Mine, The	—	—	3,193,216	24.6	—	—
Quebec Cartier Mining	19,485,440	33.4	—	—	—	—
Ontario						
Adams Mine	—	—	4,172,219	19.15	—	—
Algoma Ore Division	—	—	—	—	2,675,916	33.38
Caland Ore Co.	1,292,058	54.23	—	—	—	—
Griffith Mine, The	—	—	4,561,064	27.48	—	—
Marmoraton Mining Co.	—	—	1,680,000 <sup>3</sup>	21.40 <sup>3</sup>	—	—
Moose Mountain Mine (National Steel)	—	—	1,573,735	33.43	—	—
Sherman Mine	—	—	3,791,986	25.08	—	—
Steep Rock Iron Mines	2,167,447 <sup>e</sup>	50.50 <sup>e</sup>	—	—	—	—
British Columbia						
Texada Mines Ltd.	—	—	1,046,918	33.07	—	—
Wesfrob Mines Limited	—	—	1,789,950	38.27	—	—
Total	72,579,530	37.89	21,809,088	26.16	2,675,916	33.38

Source: Data supplied to Mineral Resources Branch by companies.

<sup>1</sup> Some magnetite recovered from spiral tails; <sup>2</sup> Analysis of shipments; <sup>3</sup> Estimated; 839,140 tons grading 42.79% Fe to mill after crushing and dry magnetic cobbing.

<sup>e</sup> Estimated; — Nil.

TABLE 3

## CRUDE IRON ORE MINED IN CANADA, BY MINING METHOD, 1971

	Long Tons	Open Pit	Long Tons	Underground		Long Tons	Total
				% Fe Nat.	% Fe Nat.		
Newfoundland							
Iron Ore Co. of Canada (Carol Operation)	24,962,700	38.4	—	—	—	24,962,700	38.4
Wabush Mines	17,751,094	32.94	—	—	—	17,751,094	32.94
Labrador-Quebec							
Iron Ore Co. of Canada (Schefferville)	6,920,791	54.35 <sup>1</sup>	—	—	—	6,920,791	54.35 <sup>1</sup>
Quebec							
Hilton Mine, The	3,193,216	24.6	—	—	—	3,193,216	24.6
Quebec Cartier Mining	19,485,440	33.4	—	—	—	19,485,440	33.4
Ontario							
Adams Mine	4,172,219	19.15	—	—	—	4,172,219	19.15
Algoma Ore Division	—	—	2,675,916	33.38	—	2,675,916	33.38
Caland Ore Co.	1,292,058	54.23	—	—	—	1,292,058	54.23
Griffith Mine, The	4,561,064	27.48	—	—	—	4,561,064	27.48
Marmaraton Mining Co.	1,680,000 <sup>2</sup>	21.40 <sup>2</sup>	—	—	—	1,680,000 <sup>2</sup>	21.40 <sup>2</sup>
Moose Mountain Mine (National Steel)	1,573,735	33.43	—	—	—	1,573,735	33.43
Sherman Mine	3,791,986	25.08	—	—	—	3,791,986	25.08
Steep Rock Iron Mines	2,167,447 <sup>e</sup>	50.50 <sup>e</sup>	—	—	—	2,167,447 <sup>e</sup>	50.50 <sup>e</sup>
British Columbia							
Texada Mines Ltd.	1,044,193	33.07	2,725	33.07	—	1,046,918	33.07
Wesfrob Mines Limited	1,789,950	38.27	—	—	—	1,789,950	38.27
Total	94,385,893	35.18	2,678,641	33.38	97,064,534	35.13	

Source: Data supplied to Mineral Resources Branch by companies.

<sup>1</sup> Analyses of shipments; <sup>2</sup> Estimated; 839,140 tons grading 42.79% Fe to mill after crushing and dry magnetic cobbing.

<sup>e</sup> Estimated; — Nil.

TABLE 4

## DISPOSITION OF CRUDE IRON ORE MINED IN CANADA, 1971

	For Direct Shipping Long Tons	Shipping % Fe Nat.	To Concentration Plant		To Concentration and Agglomeration Plant		Total Long Tons	% Fe Nat.
			Long Tons	% Fe Nat.	Long Tons	% Fe Nat.		
Newfoundland								
Iron Ore Co. of Canada (Carol Operation)	-	-	-	-	24,962,700	38.4	24,962,700	38.4
Wabush Mines	-	-	-	-	17,751,094	32.94	17,751,094	32.94
Labrador-Quebec								
Iron Ore Co. of Canada (Schefferville)	6,920,791	54.35 <sup>1</sup>	-	-	-	-	6,920,791	54.35 <sup>1</sup>
Quebec								
Hilton Mine, The	-	-	19,465,440	33.4	3,193,216	24.6	3,193,216	24.6
Quebec Carrier Mining Ontario	-	-	-	-	-	-	19,485,040	33.4
Adams Mine	2,237 <sup>2</sup>	35.19	-	-	4,172,219	19.15	4,172,219	19.15
Algoma Ore Division	-	-	-	-	2,673,619	33.38	2,675,916	33.38
Caland Ore Co.	-	-	-	-	1,295,038	54.23	1,292,058	54.23
Griffith Mine, The	-	-	-	-	4,561,064	27.48	4,561,064	27.48
Marmaraton Mining Co.	-	-	-	-	1,680,000 <sup>3</sup>	21.40 <sup>3</sup>	1,680,000	21.40 <sup>3</sup>
Moose Mountain Mine (National Steel)	-	-	-	-	1,573,735	33.43	1,573,735	33.43
Sherman Mine	-	-	-	-	3,791,986	25.08	3,791,986	25.08
Steep Rock Iron Mines	-	-	781,297 <sup>4</sup>	44.30	1,380,150 <sup>5</sup>	54.8	2,167,447 <sup>6</sup>	50.50 <sup>6</sup>
British Columbia								
Texada Mines Ltd.	-	-	1,046,918	33.07	-	-	1,046,918	33.07
Westrob Mines Limited	-	-	1,789,950	38.27	-	-	1,789,950	38.27
Total	6,923,028	54.34	23,103,605	34.13	67,037,901	33.49	97,064,534	35.13

Source: Data supplied to Mineral Resources Branch by companies

<sup>1</sup> Analysis of shipments; <sup>2</sup> For special use; <sup>3</sup> Estimated; <sup>4</sup> 839,140 tons grading 17.79% Fe to mill after crushing and dry magnetic capping;  
<sup>5</sup> The bulk of concentrate produced used to make pellets; <sup>6</sup> Crude ore shipped directly to plant without prior concentration.

<sup>e</sup> Estimated; - Nil.

TABLE 5

## USABLE IRON ORE PRODUCED IN CANADA, BY TYPE OF PRODUCT, 1971

	Direct Shipping Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	Concentrates		Pellet Concentrates		Long Tons	% Fe Nat.	Long Tons	% Fe Nat.
					Long	Tons	Long	Tons				
Iron Ore												
Newfoundland												
Iron Ore Co. of Canada (Carol Operation)	-	-	1,366,366 <sup>1</sup>	-	62,56 <sup>2</sup>	10,050,000	64,52 <sup>3</sup>	11,416,366	64.29			
Wabush Mines						6,105,504	64.20	6,105,504	64.20			
Labrador-Quebec												
Iron Co. of Canada (Schefferville)	6,920,791	54.35 <sup>4</sup>	-	-	-	-	-	-	-	6,920,791	54.35 <sup>4</sup>	
Quebec												
Hilton Mine, The	-	-	8,620,776	-	64.20	-	925,057	67.08	8,620,776	67.08		
Ontario												
Quebec Cartier Mining	-	-	-	-	-	1,023,787	65.39	1,023,787	65.39			
Adams Mine	2,237 <sup>5</sup>	35.19	-	-	-	1,639,366	47.83	1,641,603	47.82			
Algoma Ore Division	-	-	20,000 <sup>e</sup>	-	56,256	950,000 <sup>e</sup>	62,73 <sup>6</sup>	1,150,000 <sup>e</sup>	61.50			
Caland Ore Co.	-	-	-	-	-	1,366,205	67.15	1,366,205	67.15			
Griffith Mine, The	-	-	-	-	-	479,826	65.2 <sup>6</sup>	479,826	65.2 <sup>6</sup>			
Marmaraton Mining Co.	-	-	-	-	-	-	-	-	-			
Hoos Mountain Mine (National Steel)	-	-	-	-	-	671,420 <sup>7</sup>	62.56	671,420 <sup>7</sup>	62.52 <sup>6</sup>			
Sherman Mine	-	-	-	-	-	1,021,798	64.88	1,021,798	64.88			
Steep Rock Iron Mines	-	-	401,266	55.22	-	1,400,900	62.32	1,802,166	60.74			
British Columbia												
Texada Mines Ltd.	-	-	473,291	60.94	-	-	-	473,291	60.94			
Westroth Mines Ltd.	-	-	1,123,013	60.99	-	-	-	1,123,013	60.99			
Total Iron Ore	6,923,028	54.34	12,184,712	63.17	25,633,863	64.20	44,741,603	61.95				
Byproduct Iron Ore												
Cominco Ltd.												
(Kinbrary, B.C.)	-	-	-	-	-	43,036	64	43,036	64			
Falconbridge Nickel Inco. (Copper Cliff, Ont.)	-	-	-	-	-	70,172	67 <sup>e</sup>	70,172	67 <sup>e</sup>			
Total Byproduct Iron Ore	-	-	-	-	-	804,256	67.6 <sup>6</sup>	804,256	67.6 <sup>6</sup>			
Total Usable Iron Ore Produced	6,923,028	54.34	12,184,712	63.17	26,551,327	63.56	45,659,067	62.06				

Source: Data supplied to Mineral Resources Branch by companies.

<sup>1</sup> Difference between concentrate produced and concentrate sent to pellet plant; <sup>2</sup> Analysis of concentrate to pellet plant; <sup>3</sup> Analysis of pellets shipped from Sept-Tiles; <sup>4</sup> Analyses of shipments from Sept-Tiles; <sup>5</sup> For special use; <sup>6</sup> Analyses of shipments taking into account change in stocks.<sup>e</sup> Estimated; - Nil.

TABLE 6

WASTE/ORE AND CONCENTRATION RATIOS AT CANADIAN IRON ORE MINES, 1971

	Open Pit Waste	Underground Waste (long tons)	Iron Ore Mined	Usable Iron Ore Produced	Waste/Ore Ratio		Concen- tration Ratio
					Waste/Ore Ratio	Waste/Usable Ore Ratio	
Newfoundland							
Iron Ore Co. of Canada (Carol Operation)	8,717,364 <sup>1</sup> 2,688,308	—	24,962,700 17,751,094	11,550,000 <sup>2</sup> 6,105,504	0.35 0.15	0.46 0.44	2.16 2.91
Labrador-Quebec Iron Ore Co. of Canada (Schefferville)	12,574,200 <sup>1</sup>	—	6,920,791	6,920,791	1.82	1.82	n.a.
Quebec							
Hilton Mine, The	793,370	—	3,193,216	925,037	0.25	0.86	3.45
Quebec Cartier Mining Ontario	9,780,000 <sup>1</sup>	—	19,485,440	8,620,776	0.50	1.13	2.26
Adams Mine	3,509,954	—	4,172,219	1,023,787	0.84	3.43	4.08
Algoma Ore Division	—	5,758	2,675,316	1,641,663	0.00	1.63	
Caland Ore Co.	—	—	1,292,058	1,150,000 <sup>e</sup>	n.a.	1.12	
Griffith Mine, The	1,973,958	—	4,561,064	1,366,205	0.43	1.44	3.34
Marmaraton Mining Co.	3,576,800	—	1,680,000 <sup>3</sup>	479,826	2.13	7.45	3.50
Moose Mountain Mine (National Steel)	778,700	—	1,573,735	671,420 <sup>4</sup>	0.49	1.16	2.34
Sherman Mine	950,208	—	3,791,986	1,021,788	0.25	0.93	3.71
Steep Rock Iron Mines	10,995,120 <sup>1</sup>	—	2,167,447	1,802,166	5.07	6.10	1.20
British Columbia							
Texada Mines Ltd.	—	—	1,046,918	473,291	n.a.	n.a.	2.21
Wesfrob Mines Ltd.	2,095,578 <sup>1</sup>	—	1,789,950	1,123,013	1.17	1.87	1.59

Source: Data supplied to Mineral Resources Branch by companies.

<sup>1</sup> Calculated from data supplied by companies in cubic yards by using a factor of 2.0; <sup>2</sup> Concentrate produced; <sup>3</sup> Estimated; <sup>4</sup> 839,100 tons grading 42.79% Fe to mill after crushing and dry magnetic capping; <sup>e</sup> Shipments with stocks taken into account.

e Estimated; — Mill; n.a. Not applicable.

TABLE 7  
USABLE IRON ORE SHIPPED BY CANADIAN PRODUCERS, BY TYPE OF PRODUCT, 1971

	Long Tons	Direct Shipping % Fe Natural	Concentrates Long Tons	Agglomerates		Long Tons	% Fe Natural	Total Long Tons	% Fe Natural
				% Fe Natural	Long Tons				
<b>Iron Ore</b>									
Newfoundland and Iron Ore Co. of Canada (Carol Operation)	-	-	1,794,722	63.14	9,475,910	64.52	11,270,632	64.30	
Wabush Mines	-	-	-	-	5,597,110	64.28	5,597,110	64.28	
Labrador-Quebec	-	-	-	-	-	-	-	-	
Iron Ore Co. of Canada (Schefferville)	5,922,4681	54.371	-	-	-	-	5,922,4681	54.371	
Quebec	-	-	-	-	869,1782	67.08	869,1782	67.08	
Hilton Mine, The	-	-	7,864,049	64.30	-	-	7,864,049	64.30	
Quebec Cartier Mining Ontario	-	-	-	-	1,036,288	65.39	1,036,288	65.39	
Adams Mine	2,2373	35.19	-	-	1,626,041	47.75	1,626,278	47.74	
Algoma Ore Division	-	-	611,9094	56.25	858,972	62.73	1,470,881	60.03	
Caledon Ore Co.	-	-	-	-	1,364,104	67.15	1,364,104	67.15	
Griffith Mine, The	-	-	-	-	474,118	65.2	474,118	65.2	
Marmaraton Mining Co.	-	-	-	-	-	-	-	-	
Moose Mountain Mine (National Steel)	-	-	-	-	681,191	62.52	681,191	62.52	
Sherman Mine	-	-	-	-	1,025,588	64.88	1,025,588	64.88	
Steep Rock Iron Mines	-	-	5,3984	54.40	1,410,607	62.32	1,410,605	62.29	
British Columbia	-	-	-	-	-	-	-	-	
Texada Mines Ltd.	-	-	512,079	60.94	-	-	512,079	60.94	
Westfrob Mines Ltd.	-	-	1,255,540	60.80	-	-	1,255,540	60.80	
Total Iron Ore	5,924,705	54.36	12,043,697	63.21	24,419,407	63.41	42,387,809	62.09	
<b>Byproduct Iron Ore</b>									
Coninco Ltd.	-	-	-	-	47,1435	64.6	47,1435	64.6	
(Kimberley, B.C.)	-	-	-	-	81,310	67e	81,810	67e	
Falconbridge Nickel (Copper Cliff, Ont.)	-	-	-	-	795,511	67.6	795,511	67.6	
Total Byproduct Iron Ore	-	-	-	-	924,464	67.4	924,464	67.4	
Total Usable Iron Ore Shipped	5,924,705	54.36	12,043,697	63.21	25,343,871	63.56	43,312,273	62.20	

Sources: Data supplied to Mineral Resources Branch by companies.

1 Including 15,151 tons of chips grading an estimated 61.66% Fe from Carol Operation; 2 Includes 52,437 tons of heavy media; 3 For special use; 4 Run-of-mine upgraded slightly through process of crushing, screening and drying. According to Mesabi practice may be considered direct-shipping ore; 5 Smelter Consumed in production of pig iron; 6 Analysis of production.

- Nil; e Estimated.

TABLE 8

## USABLE IRON ORE SHIPPED BY CANADIAN PRODUCERS, BY DESTINATION, 1971

	All Rail		Canada		United States		All Rail		Britain		ECCSC		Japan		Other		Total	
	Canada	Other	Great Lakes	Other Ports	United States	Other	Great Lakes	Other Ports	All Rail	Britain	ECCSC	Japan	Other	Total	Other	Total	Other	Total
Iron Ore																		
Newfoundland																		
Iron Ore Co. of Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carol Concentrate	-	1,080,440	1,878,320	3,823,430	-	-	-	-	1,226,194 <sup>1</sup>	527,818	40,710 <sup>2</sup>	1,794,722	-	-	-	-	-	-
Carol Pellets	-	2,564,117	1,640,402	249,807	-	-	-	-	1,162,960	884,103	222,640 <sup>3</sup>	424,010 <sup>4</sup>	9,475,910	-	-	-	-	-
Wabush Mines	-	-	-	-	-	-	-	-	518,208	485,632 <sup>5</sup>	-	138,944 <sup>6</sup>	5,597,110	-	-	-	-	-
Labrador-Quebec																		
Iron Ore Co. of Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(Schefferville)	-	-	-	2,129,463	1,950,481	-	-	-	1,281,150	561,374 <sup>7</sup>	-	-	-	-	-	-	-	5,922,468
Quebec																		
Hilton Mine, The	461,093	7	6,270	3,446,986	189,814	-	408,085	-	1,568,471	1,911,714 <sup>8</sup>	686,760	56,034 <sup>9</sup>	869,178	-	-	-	-	-
Quebec Carrier Mining	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,864,049
Ontario																		
Adams Mine	158,826	87	87,266	-	-	-	877,462	-	-	-	-	-	-	-	-	-	-	1,036,288
Algoma Ore Division	1,538,775	87	1,470,881	-	-	-	2,237 <sup>10</sup>	-	-	-	-	-	-	-	-	-	-	1,628,270
Caland Ore Co.	-	-	1,364,104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,470,881
Griffith Mine, The	-	-	471,063	-	-	-	-	-	-	-	-	-	-	-	-	-	-	474,418
Marmaraton Mining Co.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hoosier Mountain Mine																		
(National Steel)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	681,191
Sherman Mine	1,025,588	-	681,191	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,025,588
Steep Rock Iron Mines	5,348	1,158,392	252,215	-	-	-	50	-	-	-	-	-	-	-	-	-	-	1,416,005
British Columbia																		
Texada Mines Ltd.	-	-	-	-	-	-	122,352	-	-	-	-	-	-	-	-	-	-	512,079
Westrock Mines Ltd.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,255,540
Total Iron Ore	3,189,630	6,260,590	11,970,321	6,335,884	1,291,189	4,530,789	5,069,024	3,094,485	657,698	42,387,809	-	-	-	-	-	-	-	-
Byproduct Iron Ores																		
Conincorco Ltd.,																		
(Kamerville, B.C.)	-	47,143 <sup>11</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47,143 <sup>11</sup>
Falconbridge Nickel	81,810	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81,810
Inco (Copper Cliff, Ont.)	170,563	-	624,968	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75,511
Total Byproduct Iron	252,353	47,143 <sup>11</sup>	624,968	-	-	-	-	-	-	-	-	-	-	-	-	-	-	924,464
Ore																		
Total Usable Iron Ore	3,441,983	6,307,733	12,595,489	6,335,884	1,291,189	4,530,789	5,069,024	3,092,485	657,698	43,312,273	-	-	-	-	-	-	-	-
Shipped																		

Source: Data supplied to Mineral Resources Branch by companies.

1 Comprising 1,163,598 tons to the Netherlands (the bulk is transshipped to West Germany), 41,608 tons to France and 20,988 tons to Belgium;

2 To Finland; <sup>3</sup> Comprising 563,670 tons to Italy, 256,100 tons to the Netherlands, and 1,580 tons to France; <sup>4</sup> To Spain; <sup>5</sup> To Italy; <sup>6</sup> To Spain;7 Comprising 317,496 tons to Belgium; <sup>8</sup> To West Germany; <sup>9</sup> Comprising 39,138 tons to Finland and 1,996 tons toReport Grand Bahama; <sup>10</sup> For special use; <sup>11</sup> Sister consumption in the production of pig iron.

e Estimated; - Nil.

TABLE 9  
STOCKS OF USABLE IRON ORE AT MINES AND  
SHIPPING PORTS IN CANADA, 1970-71  
(long tons)

	December 31 1970	December 31 1971	Change in Stocks
<b>Newfoundland</b>			
Iron Ore Co. of Canada, Carol Operation			
At Sept-Iles:			
Concentrates	507,556	29,336	-478,220
Pellets	933,072	1,404,977	+471,905
At Labrador City:			
Concentrates	116,339	87,756	-28,583
Pellets	171,248	273,433	+102,185
Wabush Mines	564,486	1,072,808	+508,394
Wabana Mines <sup>1</sup>	55,000	55,000	0
<b>Labrador-Quebec</b>			
Iron Ore Co. of Canada, Schefferville (at Sept-Iles)	2,427,508	3,356,887	+929,379
<b>Quebec</b>			
Hilton Mine, The	26,955	84,725	+57,770
Quebec Cartier Mining Co.	1,136,236	1,892,963	+756,727
<b>Ontario</b>			
Adams Mine	8,815	14,000	+5,185
Algoma Ore Division	115,796	129,121	+13,325
Caland Ore Co. Ltd.	1,018,022	720,451	-297,571
Griffith Mine, The <sup>2</sup>	3,623	5,724	+2,101
Marmoraton Mining Co.	44,470	53,134	+8,664
Moose Mountain Mine (National Steel)	60,262	50,491	-9,771
Sherman Mine	5,565	1,775	-3,790
Steep Rock Iron Mines Ltd.	899,785	1,057,108	+157,323
<b>British Columbia</b>			
Texada Mines Ltd.	121,743	103,559	-18,184
Wesfrob Mines Limited	188,130	55,603	-132,527
<b>Total</b>	<b>8,404,611</b>	<b>10,448,923</b>	<b>+2,044,312</b>

Source: Data supplied to Mineral Resources Branch by companies.

<sup>1</sup> Ceased operations June 1966; shipped from stockpile 1967-69; no ore shipped for iron making purposes in 1970-71. <sup>2</sup> Excluding stocks at Thunder Bay Terminal of Valley Camp Limited.

- Nil; e Estimated.

TABLE 10  
ANALYSES OF CANADIAN IRON ORE SHIPMENTS IN 1971

	Shipments (long tons)	Natural Fe	Dry Analysis				Loss by Ignition		Moisture Size Range
			SiO <sub>2</sub>	Mn	Al <sub>2</sub> O <sub>3</sub>	CaO	MgO	S	
<i> Newfoundland</i>									
Iron Ore Co. of Canada, Carol Operation	9,475,910	64.515	65.246	0.009	5.20	0.178	0.37	-	1.12
Carol Pellets	1,794,723	63.135	65.766	0.009	4.66	0.174	0.37	-	4.00
Carol Conc. 1	15,151	61.660	67.303	0.055	2.54	0.203	0.59	-	8.38
Total Carol Operation	11,285,784	64.292	65.331	0.009	5.12	0.177	0.37	-	1.59
Wabush Mines Pellets	5,597,110	64.28	65.86	-	2.88	1.63	-	-	2.40
<i> Quebec-Labrador</i>									
Quebec									
Iron Ore Co. of Canada (Schefferville)	2,752,700	52.178	57.313	0.065	10.93	1.413	1.11	-	8.96
Non-Bessmer Manganiferous	18,781	48.638	54.015	0.109	7.77	5.120	1.12	-	9.95
Total, Quebec	2,771,481	52.154	57.291	0.065	10.91	1.438	1.11	-	8.97
<i> Labrador</i>									
Iron Ore Co. of Canada (Schefferville)	3,134,855	56.295	61.795	0.060	5.97	0.156	1.65	-	8.90
Non-Bessmer	3,981	51.492	56.333	0.188	5.68	0.802	1.70	-	9.62
Manganiferous									
Total, Labrador	3,135,836	56.294	61.793	0.060	5.97	0.156	1.65	-	8.90
Total, IOC (Schefferville)	5,907,317 <sup>2</sup>	54.351	59.680	0.062	8.29	0.757	1.39	-	8.93

%

<sup>2</sup> 1970

Table 10 (cont'd)

	Shipments		Natural		Dry Analysis			Loss by		Size Range		
	(long tons)	Fe	Fe	P	SiO <sub>2</sub>	Mn	Al <sub>2</sub> O <sub>3</sub>	CaO	MgO	S	Ignition	Moisture
	%      %											
Quebec												
Quebec Cartier Mining Co.	7,864,049	64.30	66.12	0.025	5.00	—	0.75	—	—	—	2.75	-10 + 200 mesh
Concentrate												
Hilton Mine, The	814,767	67.20	67.23	0.006	1.97	0.078	0.30	0.20	1.29	0.005	—	0.07
Hilton Pellets												-5 <sup>1</sup> / <sub>8</sub> " + 3 <sup>1</sup> / <sub>8</sub> " (size range in 1970)
Hilton Chips	52,437	63.53	67.08	0.006	1.97	0.081	0.28	0.20	1.32	0.009	—	5.29
Hilton Media	1,974	67.92	67.43	0.008	2.52	0.077	0.26	0.18	1.07	0.58	—	6.70
Total, Hilton	869,178	67.08	67.22	0.006	1.97	0.078	0.30	0.20	1.29	0.005	—	0.26
Ontario <sup>c</sup>												
Adams Mine	1,036,288	65.39	65.63	0.018	5.21	0.10	0.19	0.24	0.43	—	—	0.37
Adams Pellets												-5 <sup>1</sup> / <sub>8</sub> " + 3 <sup>1</sup> / <sub>8</sub> " (size range in 1970)
Algoma Ore Division												
Algoma Sinter (regular)	86,393	50.05	50.56	0.020	11.21	2.74	2.21	4.80	7.22	0.081	1.05	1.01
Algoma Sinter (super-fluxed)	1,539,648	47.62	47.62	0.025	10.13	2.56	1.70	10.58	7.87	0.092	1.05	—
Algoma Crude	2,237	35.19	—	—	—	—	—	—	—	—	—	—
Total, Algoma	1,628,278	47.74	47.78	0.025	10.19	2.57	1.73	10.27	7.84	0.092	1.05	0.09
Galand Ore Company Limited												
Galand Pellets	856,972	62.73	63.12	0.010	6.45	0.25	1.38	0.20	0.25	—	—	-3 <sup>1</sup> / <sub>4</sub> " + 3 <sup>1</sup> / <sub>8</sub> "
Warren Course	611,909	56.25	58.45	0.020	5.46	0.23	0.65	0.18	0.22	—	—	-2 <sup>1</sup> / <sub>4</sub> " + 3 <sup>1</sup> / <sub>8</sub> "
Total, Galand	1,470,881	60.03	61.18	0.014	6.04	0.24	1.08	0.19	0.24	—	—	1.92
Griffith Mine, The												
Pellets	1,364,104	67.15	67.27	0.02	2.97	0.39	—	—	—	—	0.18	84% + 3 <sup>1</sup> / <sub>8</sub> " - 5 <sup>1</sup> / <sub>8</sub> "
Kirk Pellets		—	—	—	—	—	—	—	—	—	—	—
Marmatocon Mining Co.												
Marmora Pellets	474,418	65.2	65.2	0.007	3.55	0.09	0.68	1.36	0.90	0.009	—	-1 <sup>1</sup> " + 6 mesh
National Steel Corporation of Canada, Ltd.												
Noce Mt. Pellets	637,245	62.753	63.542	0.010	8.13	0.015	0.56	—	—	—	1.25	98% + 1 <sup>1</sup> / <sub>2</sub> "
Chips	4,3,946	58.940	62,390	0.009	8.95	0.015	0.60	—	—	—	5.53	12% + 1 <sup>1</sup> / <sub>2</sub> "
Total, National Steel	681,191	62.517	63.471	0.010	8.18	0.015	0.56	—	—	—	1.52	—

Table 10 (cont'd)

	Shipments (long tons)	Natural		Dry Analysis			CaO	MgO	S	Loss by Ignition	Moisture	Size Range
		Fe	Fe	P	SiO <sub>2</sub>	Mn						
Sherman Mine Pellets	1,025,588	64.88	65.35	0.016	5.58	—	0.28	0.15	0.27	0.003	—	0.72 -2" + 3/8"
Steep Rock Iron Mines Ltd. S.R. Pellets	1,410,607	63.32	62.67	—	7.46	—	—	—	—	—	—	0.56 -1" + 1/4"
S.R. Fines	5,348	54.37	58.34	—	6.56	—	—	—	0.050	—	—	6.80 -4 mesh
S.R. Coarse	50	57.64	60.36	—	3.63	—	—	—	0.021	—	—	4.50 -2" + 3/8"
Total, Steep Rock	1,416,005	62.29	62.65	—	7.46	—	—	—	—	—	—	0.58 —
<i>British Columbia</i>												
Tesada Mines Ltd. Magnetite conc.	512,079	60.94	64.55	0.010	4.61	—	0.815	2.37	0.67	0.45	—	5.597 -10 mesh
Wesfrob Mines Limited Sinter Feed Conc.	528,280	57.55	60.67	0.03	6.58	—	1.34	—	—	0.95	—	5.15 30% - 149 micron
Pellet Feed Conc.	727,260	63.16	69.47	0.01	1.38	—	0.38	—	—	0.45	—	9.09 max. 4000 micron 80% - 444 micron
Total, Wesfrob Mines	1,255,540	60.80	65.68	0.02	3.62	—	0.82	—	—	0.66	—	7.43 max. 1680 micron

Source: Data supplied to Mineral Resources Branch by companies.

1 Analysis of 1970 shipments. 2 Excluding chips. 3 For special use. — Nil, not available or not applicable; e Estimated.

TABLE 1

CANADA, CONSUMPTION OF IRON-BEARING MATERIALS AT  
IRON-STEEL PLANTS<sup>1</sup>, 1971

(long tons)

	In Sinter Plants <sup>2</sup>	Pig Iron Furnaces <sup>3</sup>	In Iron and Steel Furnaces		Total in Furnaces
			3	Steel Furnaces	
Iron Ore					
Crude and concentrates	171,262	281,841	71,753		353,594
Pellets	298,933	8,172,045	199,579		8,371,624
Sinter from mines	65,143	1,635,468	160		1,635,628
Subtotal	535,338	10,089,354	271,492		10,360,846
Sinter Produced at steel plant	—	1,088,404 <sup>4</sup>	—		1,088,404
Total	535,338	11,177,758	271,492		11,449,250 <sup>5</sup>
% Fe	60.17	60.98	63.31		61.13
Other Iron-Bearing Materials					
Flue dust	96,695	—	—		—
Scale, sponge iron, etc.	350,212	115,336	2,856		118,192
Total	446,907	115,336	2,856		118,192
% Fe	66.10	58.34	60.05		58.38

Source: Company data supplied to Mineral Resources Branch.

<sup>1</sup> All integrated producers; excludes Quebec Iron and Titanium Corp.; <sup>2</sup> Sinter plant located at steel works consume new iron ore "screenings" as well as other iron-bearing materials; <sup>3</sup> Blast and electric furnaces;

<sup>4</sup> Sinter produced mainly from 535,338 tons of "new iron ore" and 446,907 tons of other iron-bearing materials;

<sup>5</sup> Including sintered iron-bearing materials. Total iron ore consumption of "new iron ore" is an estimated 10,896 million tons comprising 10,361 million tons of iron ore and neglecting losses or gains in weight due to sintering, 0.535 million tons of iron ore fines.

— Nil.



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by Company



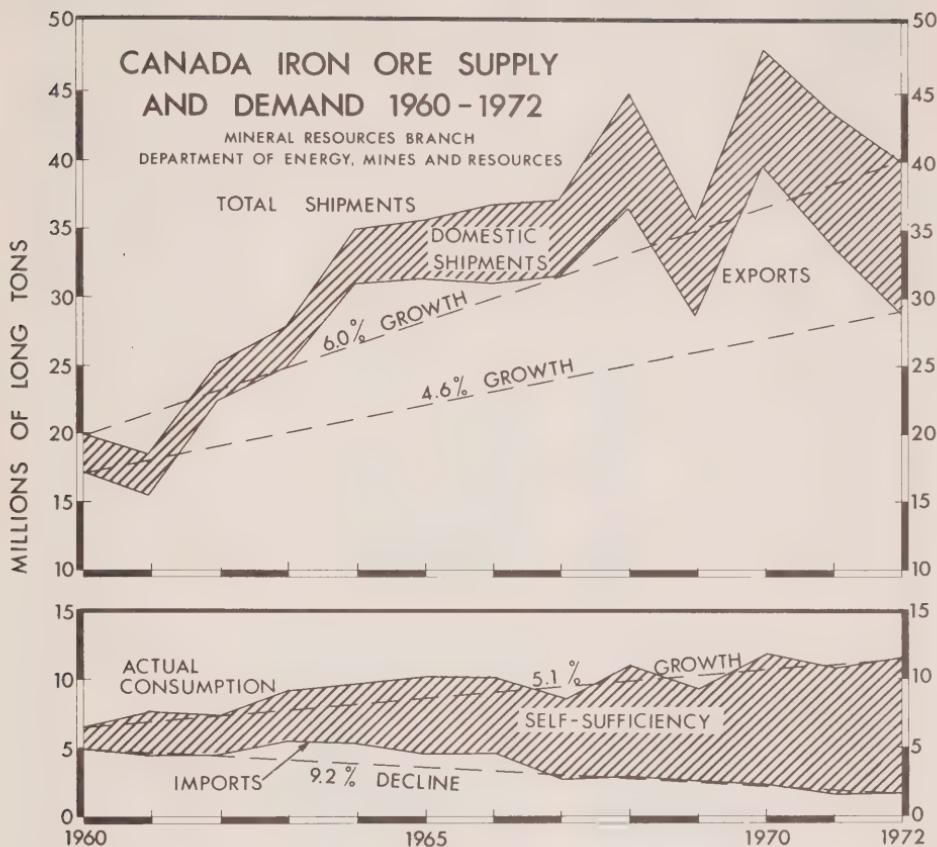


Figure 2

CANADA, IRON ORE PRODUCERS<sup>1</sup>, 1971 and 1972

Company and Property Location	Participating Companies	Material Mined and/or Treated (% Fe natural)	Shipments		
			1971	1972	Product Shipped ('000 wet long tons)
Adams Mine; Boston Twp., near Kirkland Lake, Ont.	Dominion Foundries and Steel, Ltd. (acquired from Jones & Laughlin Mining Company, Ltd. July 30, 1971); managed by Cliffs of Canada Limited, a wholly-owned subsidiary of the Cleveland-Cliffs Iron Company	Magnetite from open pit mine (19)	Pellets(66/65)	1,036	1,093
Algoa Ore Division of The Algoa Steel Corp., Ltd.; mines and sinter plant near Vawas, Ont.	Wholly owned	Siderite from open pit and underground mines (34)	Siderite sinter 1,628 <sup>2</sup> (48/48)	1,797 <sup>3</sup>	
Caland Ore Co. Ltd.; East arm of Steep Rock Lake, near Attikokan, Ont.	Inland Steel Co.	Hematite and goethite from open pit mine (54)	Pellets(3/3/63), Concentrate (59/56)	859 612	1,115 783
Griffith Mine, The Bruce Lake 35 miles south of Red Lake, Ont.	The Steel Co. of Canada, Ltd.; managed by Pickards Mather & Co.	Magnetite from open pit mine (24)	Pellets(67/67)	1,364	1,380
Hilton Mine, The; near Shawville, Quebec, 40 miles NW of Ottawa	The Steel Co. of Canada, Ltd., 50%; Jones & Laughlin Steel Corp., 25%; (managing agent), 25%	Magnetite from open pit mine 25e	Pellets(67/67)	869	878

Table 12(cont'd)

Company and Property Location	Participating Companies	Material Mined and/or Treated (% Fe natural)	Shipments ('000 wet long tons)		
			Product Shipped (% Fe dry/wet)	1971	1972
Iron Ore Company of Canada 1. Schefferville, Que., operation	Labrador Mining and Exploration Co., 4.73%; Hollinger Mines Ltd., 10.17%; The Hanna Mining Co. (managing agent), 26.37%; Armaco Steel Corp., 5.87%; Bethlehem Steel Corp., 18.80%; Youngstown Sheet and Tube Company, 5.87%; National Steel Corp., 17.62%; Republic Steel Corp., 5.87%; Wheeling-Pittsburgh Steel Corp., 4.70%	Hematite-goethite-limonite from open pit mines (54)	Direct-shippping ore (59/54)	5,922	5,046
2. Carol Lake, Labrador operation <sup>4</sup>		Specular hematite and some magnetite from open pit mines	Pellets (65/64) Concentrate (66/63)	575	7,985
Marmaraton Mining Co., Division of Bethlehem Chile Iron Mines Company; near Marmora, Ont.	Bethlehem Steel Corp.	Magnetite from open pit mine (20e)	Pellets (65/65)	474	490
National Steel Corporation of Canada Ltd., Moose Mountain Mine; Sudbury area, 20 miles north of Capreol, Ont.	National Steel Corp. (The Hanna Mining Co. is the managing agent)	Magnetite from open pit mine (33)	Pellets (63/63)	681	641
Quebec Cartier Mining Co., Gagnon, Quebec	United States Steel Corp.	Specular hematite from open mine (33)	Specular hematite con- centrate (66/64)	7,864	7,432

Table 12 (cont'd)

Company and Property Location	Participating Companies	Material Mined and/or Treated (% Fe natural)	Product Shipped ('000 wet long tons) (% Fe dry/wet)	Shipments		
				1971	1972	
Sherman Mine; near Temagami, Ontario	Dominion Foundries and Steel, Limited, 90%; Terapaga Mining Company (wholly-owned subsidiary of the Cleveland-Cliffs Iron Company), 10%. The operation and management of the mine is by Cliffs of Canada, Limited, also a wholly-owned subsidiary of the Cleveland-Cliffs Iron Company	Magnetite from open pit mines (24)	Pellets(66/65)	1,026	1,052	
Steeep Rock Iron Mines Ltd.; Steep Rock Lake, N. of Atikokan, Ont.	Publicly-owned company	Hematite-goethite from open pit mine (55e)	Concentrate (58/54) Pellets(63/63)	5 1,411	7 1,467	
Texada Mines Ltd.; Texada Island, B.C.	Kaiser Aluminum and Chemical Corp.	Magnetite and chalcopyrite from underground mines (35)	Magnetite concentrate(65/61)	512	614	
Wabush Mines, Scully Mine	The Steel Co. of Canada, Ltd., 25.6%; Dominion Foundries and Steel, Ltd., 16.4%; Youngstown Sheet and Tube Company, 15.6%; Inland Steel Co., 10.2%; Interlake, Inc., 10.2%; Wheeling-Pittsburgh Steel Corp., 10.2%; Finsider of Italy, 6.6%; and Pickands Mather & Co. (managing agent), 5.2%	Specular hematite and some magnetite from open pit mine (33)	Pellets(66/64) Concentrate(66/64) -	5,597 3	5,310 3	

Table 12 (cont'd)

Company and Property Location	Participating Companies	Material Mined and/or Treated (% Fe natural)	Product Shipped (% Fe dry/wet)	Shipments ('000 wet long tons) 1971 1972
Westfrob Mines Limited; Tasu Harbour, Moresby Is., Queen Charlotte Is., B.C.	Falconbridge Nickel Mines Limited	Magnetite and chalcopyrite from open pit mines (37)	Pellet-feed con- centrate (69/63) 727 Sinter-feed con- centrate (61/58) 528	330 284
<b>BYPRODUCT PRODUCERS</b>				
Cominco Ltd. <sup>6</sup> ; Kimberley, B.C.	Publicly-owned company	Pyrrhotite flotation concen- trates roasted for acid pro- duction; calcine sintered at plant.	Iron oxide sinter 47 (63/63) is processed into pig iron at plant.	28 <sup>7</sup>
Falconbridge Nickel Mines Ltd. <sup>8</sup> ; Falconbridge, Ont.	Publicly-owned company	Pyrrhotite flotation concen- trates (57) treated	Calcine (67/67) 82	19
The International Nickel Co. of Canada, Ltd.; Copper Cliff, Ont.	Publicly-owned company	Pyrrhotite flotation concen- trates (57) treated	Pellets (68/68) 796	700
Quebec Iron and Titanium Corp.; mine at Lac Tio, Que.; electric smelter at Sorel, Quebec	Kennebott Copper Corp.; Gulf & Western Industries Inc. (The New Jersey Zinc Co.)	Ilmenite-hematite ore (40% Fe, 35% TiO <sub>2</sub> ) from open pit mine at Lac Tio, beneficiated and calcined at Sorel	Ilmenite calcine electric smelted to TiO <sub>2</sub> slag and various grades of desulphurized pig iron or remelt iron	1,600 <sup>e,8</sup> 1,600 <sup>e,8</sup>

Sources: Company reports, personal communications and others.

<sup>1</sup> Exclusive of Oradigm Mines Limited which ships magnetite byproduct concentrate to Western Canada coal preparation plants;

<sup>2</sup> Comprising 1,539,648 tons of superfluxed sinter, 86,393 tons of regular sinter, and 2,237 tons of crude ore shipped to the U.S.A. to be used as food supplement in the livestock industry. Comprising 1,632,766 tons of superfluxed sinter, 142,566 tons of regular sinter, and 1,448 tons of crude ore (for special use); The assets of the Carol Pelle<sup>5</sup> Company, which was established to pelletize concentrates produced by IOC, were acquired by IOC on December 31, 1970; Operating subsidiary of Lykes-Youngstown Corporation; Closed in 1972; Sinter consumed in pig iron production; Ilmenite calcine smelted.

<sup>e</sup> Estimated: - Nil.

TABLE 13

## CRUDE IRON ORE MINED IN CANADA, BY VARIETY AND GRADE, 1972

	Hematite		Magnetite		Siderite	
	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.
	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.
Newfoundland Iron Ore Company of Canada (Carol Operation)	17,610,000 <sup>1</sup> 15,250,920	38.8 32.09	— —	— —	— —	— —
Wabush Mines	—	—	—	—	—	—
Labrador-Quebec Iron Ore Company of Canada (Schefferville)	53,772	—	—	—	—	—
Quebec	—	—	3,060,000 <sup>e</sup>	24.6 <sup>e</sup>	—	—
Hilton Mine, The	33.7	—	—	—	—	—
Quebec Cartier Mining	14,208,501	—	4,314,587	19.25	2,748,121	34.01
Ontario	—	—	—	—	—	—
Adams Mine	—	—	—	—	—	—
Algoma Ore Division	54.42	—	4,831,004	23.70	—	—
Caland Ore Co.	2,274,740	—	1,18,100 <sup>3</sup>	20.30 <sup>3</sup>	—	—
Griffith Mine, The	—	—	—	—	—	—
Marmaraton Mining Co.	—	—	1,654,741	33.44	—	—
Moose Mountain Mine (National Steel)	—	—	3,990,831	24.37 (dry)	—	—
Sherman Mine	1,805,024 <sup>e4</sup>	54.87 <sup>e</sup>	—	—	—	—
Steen Rock Iron Mines	—	—	1,035,115	34.59	—	—
British Columbia	—	—	1,100,326	37.19	—	—
Texada Mines Ltd.	—	—	—	—	2,748,121	34.01
Wesfrob Mines Limited	55,274,582	38.19	21,704,604	—	—	—
Total	—	—	—	—	—	—

Source: Data supplied to Mineral Resources Branch by companies.

<sup>3</sup>Estimated; 858,793 tons grading 40.60% Fe to mill 2Analysis of shipments;<sup>1</sup>Some magnetite recovered from spiral tails; 2Analysis of shipments of direct ore (fed to the pellet plant<sup>4</sup>Comprised of an estimated 1,30,000 tons of raw ore (of lower grade necessitating prior after crushing and dry magnetic capping); 3Some magnetite recovered from spiral tails; 4Comprised of an estimated 39.00% Fe and 505,024 tons of raw ore (of lower grade necessitating prior without prior beneficiation) grading an estimated 39.00% Fe and 505,024 tons of raw ore (of lower grade necessitating prior beneficiation) grading 44.26% Fe.<sup>e</sup>Estimated; — Nil.

TABLE 14

## CRUDE IRON ORE MINED IN CANADA, BY MINING METHOD, 1972

	Open Pit		Underground		Total	
	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.
Newfoundland						
Iron Ore Co. of Canada (Carol Operation)	17,610,000	38.8	—	—	17,610,000	38.8
Wabush Mines	15,250,920	33.09	—	—	15,250,920	33.09
Labrador-Quebec						
Iron Ore Co. of Canada (Schefferville)	4,125,397	53.77 <sup>1</sup>	—	—	4,125,397	53.77 <sup>1</sup>
Quebec						
Halton Mine, The	3,060,000 <sup>e</sup>	24.6 <sup>e</sup>	—	—	3,060,000 <sup>e</sup>	24.6 <sup>e</sup>
Quebec Carrier Mining Ontario	14,208,501	33.7	—	—	14,208,501	33.7
Adams Mine	4,314,587	19.25	—	—	4,314,587	19.25
Algoma Ore Division	—	—	2,748,121	34.01	2,748,121	34.01
Caland Ore Co.	2,274,740	54.42	—	—	2,274,740	54.42
Griffith Mine, The	4,831,004	23.70	—	—	4,831,004	23.70
Marmaraton Mining Co.	1,718,002	20.70	—	—	1,718,002	20.70
Moose Mountain Mine (National Steel)	1,654,741	33.44	—	—	1,654,741	33.44
Sherman Mine	3,990,831	24.37(dry)	—	—	3,990,831	24.37(dry)
Steep Rock Iron Mines	1,805,024 <sup>e</sup> 3	54.87 <sup>e</sup>	—	—	1,805,024 <sup>e</sup> 3	54.87 <sup>e</sup>
British Columbia						
Texada Mines Ltd.	—	—	1,035,115	34.59	1,035,115	34.59
Wesfrob Mines Limited	1,100,326	37.19	—	—	1,100,326	37.19
Total	75,944,071	34,40	3,783,236	34.17	79,727,307	34.39

Source: Data supplied to Mineral Resources Branch by companies.

<sup>1</sup> Analysis of shipments; <sup>2</sup>Estimated: 858,793 tons grading 40.60% Fe to mill after crushing and dry magnetic capping;<sup>3</sup> A small amount came from underground.<sup>e</sup> Estimated; — N/A.

TABLE 15

## DISPOSITION OF CRUDE IRON ORE MINED IN CANADA, 1972

	For Direct Shipping	To Concentration Plant			To Concentration and Agglomeration Plant			Total
		Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	
<b>NEWFOUNDLAND</b>								
Iron Ore Co. of Canada (Carol Operation)	-	-	-	-	-	17,610,000	38.8	17,610,000
Wabush Mines	-	-	-	-	-	15,250,920	33.09	15,250,920
<b>LABRADOR-QUEBEC</b>								
Iron Ore Co. of Canada (Schaefferville)	4,125,397	53.77 <sup>1</sup>	-	-	-	-	-	4,125,397
QUEBEC	-	-	-	-	-	3,060,000 <sup>2</sup>	24.6 <sup>3</sup>	3,060,000 <sup>2</sup>
Hilton Mine, The Quebec Cartier Mining	-	-	16,208,501	33.7	-	-	-	14,208,501
ONTARIO	-	1,448 <sup>2</sup>	34.96	-	-	4,314,587	19.25	4,314,587
Adams Mine	-	-	-	-	-	2,746,773	34.01	2,746,121
Algoma Ore Division	-	-	-	-	-	2,274,740	54.42	2,274,740
Caland Ore Co.	-	-	-	-	-	4,831,004	4,931,004	23.70
Griffith Mine, The Marboration Mining Co.	-	-	-	-	1,718,000 <sup>3</sup>	20,30	1,718,000 <sup>3</sup>	20.30
Moose Mountain Mine (National Steel)	-	-	-	-	-	33.43	1,654,741	33.43
Sherman Mine	-	-	-	-	-	1,654,741	24.37	1,654,741
Steep Rock Iron Mines	-	-	505,024 <sup>4</sup>	44.26	3,990,331	59.00 <sup>5</sup>	1,803,034 <sup>6</sup>	56.87 <sup>6</sup>
BRITISH COLUMBIA	-	-	-	-	1,300,000 <sup>6</sup>	-	-	-
Texada Mines Ltd.	-	-	1,035,115	34.59	-	-	1,035,115	34.59
Westroth Mines Ltd.	-	-	1,100,326	37.19	-	-	1,100,326	37.19
Total	4,126,845	53.76	16,848,966	36.30	58,751,496	33.07	79,721,307	34.39

Source: Data supplied to Mineral Resources Branch by companies.

<sup>1</sup> Analysis of shipments; <sup>2</sup> For special use; <sup>3</sup> Estimated; <sup>4</sup> tons grading 40-60% Fe to mill after crushing and dry magnetic cobbling;<sup>4</sup> Almost all the concentrate produced was pelletized; <sup>5</sup> Crude ore shipped directly to plant without prior concentration.<sup>6</sup> Estimated; - N/A.

TABLE 16  
USABLE IRON ORE PRODUCED IN CANADA, BY TYPE OF PRODUCT, 1972

	Direct Shipping		Concentrates		Agglomerates		Total	
	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.
<b>Iron Ore</b>								
Newfoundland								
Iron Ore Co. of Canada (Carol Operation)	—	—	643,106 <sup>1</sup>	62.45 <sup>2</sup>	7,355,407	64.12 <sup>3</sup>	7,998,513	63.99
Wabush Mines	—	—	—	—	4,733,190	64.28	4,733,190	64.28
Labrador-Quebec								
Iron Ore Co. of Canada (Schefferville)	4,125,397	53.77 <sup>4</sup>	—	—	—	—	4,125,397	53.77 <sup>4</sup>
Quebec								
Hilton Mine, The	—	—	6,157,534	64.36	886,455	67.12	886,455	67.12
Quebec Cartier Mining Ontario	—	—	—	—	—	—	6,157,534	64.36
Adams Mine	1,448 <sup>5</sup>	34.96	—	—	1,112,589	65.21	1,112,589	65.21
Algoma Ore Division	—	—	794,939 <sup>6</sup>	56.40 <sup>6</sup>	1,763,794	48.39	1,763,794	48.38
Caland Ore Co.	—	—	—	—	1,036,000 <sup>6</sup>	63.02	1,830,939 <sup>6</sup>	60.15
Griffith Mine, The	—	—	—	—	1,382,457	67.16	1,382,457	67.16
Marmaraton Mining Co.	—	—	—	—	4,589,233	65.46	4,589,233	65.46
Moose Mountain Mine (National Steel)	—	—	—	—	665,772 <sup>7</sup>	62.18 <sup>6</sup>	665,772 <sup>7</sup>	62.18 <sup>6</sup>
Sherman Mine	—	—	—	—	1,056,323	64.97	1,056,323	64.97
Steep Rock Iron Mines	—	—	—	—	1,445,400	62.64	1,445,400	62.64
British Columbia								
Texada Mines Ltd.	—	—	490,666	61.37	—	—	490,666	61.37
Wesfrob Mines Ltd.	—	—	672,763	60.82	—	—	672,763	60.82
Total Iron Ore	4,126,845	53.76	8,759,008	63.06	21,896,620	63.12	34,782,473	61.99
<b>Byproduct Iron Ore</b>								
Cominco Ltd. (Kamloops, B.C.)	—	—	—	—	28,259	63.0	28,259	63.0
Falconbridge Nickel Inco. (Copper Cliff, Ont.)	—	—	—	—	19,892	67.0 <sup>6</sup>	19,892	67.0 <sup>6</sup>
Total Byproduct Iron Ore	—	—	—	—	700,000	67.6	700,000	67.6
Total Usable Iron Ore Produced	4,126,845	53.76	8,759,008	63.06	22,644,771	63.26	35,530,624	62.10

Source: Data supplied to Mineral Resources Branch by companies.

<sup>1</sup> Difference between concentrate produced and concentrate sent to pellet plant; <sup>2</sup> Analysis of concentrate to pellet plant; <sup>3</sup> Analysis of pellets shipped from Sept-Iles; <sup>4</sup> Analyses of shipments from Sept-Iles; <sup>5</sup> For special use; <sup>6</sup> Analysis of shipments; <sup>7</sup> Shipments taking into account change in stocks.

e Estimated; - Nil.

TABLE 17

## WASTE/ORE AND CONCENTRATION RATIOS AT CANADIAN IRON ORE MINES, 1972

	Open Pit Waste	Underground Waste	Iron Ore Mined (long tons)	Usable Iron Ore Produced	Waste/Ore Ratio	Waste-Usable Ore Ratio	Concentration Fe Ratio	Recovery (%)
Newfoundland								
Iron Ore Co. of Canada (Carol Operation)	5,441,044 <sup>1</sup> 3,211,018	-	17,610,000 15,250,920	7,998,513 <sup>2</sup> 4,133,190	0.31 0.21	0.68 0.68	2.20 3.22	74.9 60.2
Wabush Mines								
Labrador-Quebec Iron Ore Co. of Canada (Schefferville)	13,024,810 <sup>1</sup>	-	4,125,397	4,125,397	3.16	3.16	1.00	100.0
Quebec								
Hilton Mine, The Quebec Cartier Mining	465,238 4,340,000 <sup>1</sup>	-	3,060,000 <sup>e</sup> 14,208,501	886,455 6,157,534	0.15 0.31	0.52 0.70	3.45 2.31	79.0 82.7
Ontario								
Adams Mine	1,998,848	-	4,314,587	1,112,589	0.46	1.80	3.88 <sup>3</sup>	
Algoma Ore Division	-	3,791	2,748,121	1,765,242	0.00	0.00	1.56	81.9
Caland Ore Co.	4,210,920	-	2,274,740	1,830,939 <sup>4</sup>	1.85	2.30	1.24	88.9 <sup>5</sup>
Griffith Mine, The	1,559,469	-	4,831,000 <sup>3</sup>	1,382,457	0.32	1.13	3.49	81.0 <sup>6</sup>
Yarmouth Mining Co.	-	-	1,718,000 <sup>3</sup>	459,233	1.65	6.18	3.74	86.1 <sup>6</sup>
House Mountain Mine (National Steel)	642,848	-	1,654,741	665,772 <sup>4</sup>	0.27	0.67	2.49	74.8 <sup>8</sup>
Sherman Mine	2,862,760	-	3,990,831	1,056,323	0.71	2.69	3.78	70.5 <sup>8</sup>
Steep Rock Iron Mines	14,654,272 <sup>1</sup>	-	1,805,024	1,445,400	8.14	10.17	1.25	91.8
British Columbia								
Texada Mines Ltd	-	-	1,035,115	490,666	0.00	0.00	2.11	84.1 <sup>8</sup>
Westfrob Mines Ltd	1,278,572 <sup>1</sup>	-	1,100,326	672,763	1.16	1.90	1.64	100.0

Source: Data supplied to Mineral Resources Branch by companies.

1 Calculated from data supplied by companies in cubic yards by using a factor of 2.0; 2 Pellets and concentrate; 3 Estimated; 4 Shipments with stocks taken into account.

e Estimated; -N/A; \* Plants with floatation circuits (used to reduce silica thereby raising iron content; in the pellet feed circuit of Westfrob Mines the iron concentrate is cleaned of sulphide minerals).

TABLE 18

## USABLE IRON ORE SHIPPED BY CANADIAN PRODUCERS, BY TYPE OF PRODUCT, 1972

	Direct Shipping		Concentrates		Agglomerates		Total	
	Long Tons	% Fe Natural	Long Tons	% Fe Natural	Long Tons	% Fe Natural		
<b>Iron Ore</b>								
Newfoundland								
Iron Ore Co. of Canada (Carol Operation)	-	-	577,580 <sup>1</sup>	62.64 <sup>e</sup>	7,985,290	64.12	8,562,870 64.02	
Wabush Mines	-	-	2,862	64.42 <sup>e</sup>	5,309,650	64.20	5,312,512 64.20	
Labrador-Quebec								
Iron Ore Co. of Canada (Schafferville)	5,046,156 <sup>2</sup>	53.93	-	-	-	-	5,046,156 <sup>2</sup> 53.93	
Quebec								
Hilton Mine, The Quebec Cartier Mining Ontario	-	-	7,431,917	64.35	877,544 <sup>3</sup>	67.03	877,544 <sup>3</sup> 67.03	
Adams Mine Algoma Ore Division	1,4484	34.96	-	-	1,092,968	65.35	1,092,968 65.35	
Caland Ore Co.	-	-	783,2896	56.40	1,795,332 <sup>5</sup>	48.46	1,796,780 <sup>5</sup> 48.45	
Griffith Mine, The Marmarition Mining Co.	-	-	-	-	1,380,151	63.03	1,380,151 60.29	
Moose Mountain Mine (National Steel)	-	-	-	-	1,489,763	67.16	1,489,763 67.16	
Sherman Mine Steep Rock Iron Mines	-	-	-	-	641,041	62.18	641,041 62.18	
British Columbia					1,052,297	64.97	1,052,297 64.97	
Texada Mines Ltd.	-	-	502,407	61.37	1,467,208	62.64	1,473,907 62.60	
Westfrob Mines Ltd.	-	-	614,029 <sup>7</sup>	60.90	-	-	502,407 61.37	
Total Iron Ore	5,047,604	53.92	9,918,783	63.25	23,206,279	63.13	38,172,666 61.95	
<b>Byproduct Iron Ore</b>								
Cominco Ltd.								
(Kimberley, B.C.)	-	-	-	-	27,589 <sup>8</sup>	63 <sup>e</sup>	27,589 <sup>8</sup> 63 <sup>e</sup>	
Falconbridge Nickel Inco (Copper Cliff, Ont.)	-	-	-	-	18,528	67 <sup>e</sup>	18,528 700,000	
Total Byproduct Iron Ore	-	-	-	-	746,117	67.4	746,117 67.4	
Total Usable Iron Ore Shipped	5,047,604	53.92	9,918,783	63.25	23,952,396	63.26	38,918,783 62.05	

Source: Data supplied to Mineral Resources Branch by companies.

<sup>1</sup> Excluding 93,547 tons of chips grading an estimated 62.64% Fe. <sup>2</sup> Including 93,547 tons of chips grading an estimated 62.64% Fe.<sup>3</sup> Including 21,758 tons of chips and 547 tons of heavy media. <sup>4</sup> For special use. <sup>5</sup> Comprised of 1,652,766 tons of superfluxed sinterand 142,566 tons of regular sinter. <sup>6</sup> Run-of-mine upgraded slightly through process of crushing, screening and drying. According to Mesabi practice may be considered direct-shipper ore. <sup>7</sup> Comprised of 330,009 tons of pellet feed and 284,020 tons of sinter feed.<sup>8</sup> Sinter consumed in production of pig iron.- Nil; <sup>e</sup> Estimated

TABLE 19  
USABLE IRON ORE SHIPPED BY CANADIAN PRODUCERS, BY DESTINATION, 1972

	Canada		United States		Great Lakes		Other Ports		All Rail		Other		Total
	All Rail	Other							British	ECSC	Japan	Other	
Iron Ore Newfoundland													
Iron Ore Co., of Canada	-	-	2,178,580	2,658,030	-	-	14,590	470,820 <sup>1</sup>	92,170	-	577,580 <sup>2</sup>		
Carol Concentrate	-	744,790	2,316,010	-	-	938,300	752,690 <sup>3</sup>	88,050	604,850 <sup>4</sup>	7,985,290			
Wabush Mines	-	2,263,371	-	2,862	270,752	-	90,321	186,603 <sup>5</sup>	-	182,593 <sup>6</sup>	5,309,650	2,862	
Pellets	-	-	-	-	-	-	-	-	-	-	-	-	
Concentrate	-	-	-	-	-	-	-	-	-	-	-	-	
Lachaud-Glazebrook													
Iron Ore Co., of Canada	-	-	1,450,813	1,609,316	-	-	1,074,344	911,683 <sup>7</sup>	-	-	5,046,156 <sup>8</sup>		
Quebec	-	-	-	-	-	-	408,018 <sup>9</sup>	1,594,542	2,135,942 <sup>10</sup>	537,060	44,087 <sup>11</sup>	7,431,917	
Hilton Mine, The (pallets)	469,526	7,855	2,907,989	206,442	-	-	-	-	-	-	-	-	
Ontario	-	-	-	-	-	-	380,323	-	-	-	-	-	
Adams Mine (pellets)	712,645	-	-	-	-	-	1,448,12	-	-	-	-	-	
Algoma Ore Division (sinter)	1,652,766	142,566	-	-	-	-	-	-	-	-	-	-	
Caland Ore Co.	-	-	-	-	-	-	-	-	-	-	-	-	
Pellets	-	-	-	-	-	-	-	-	-	-	-	-	
Concentrate	-	-	-	-	-	-	-	-	-	-	-	-	
Griffith Mine, The (pellets)	764	12,492	1,115,035	-	-	-	-	-	-	-	-	-	
Marmoraton Mining Co. (pellets)	-	1,380,151	770,033	-	-	-	-	-	-	-	-	-	
Moore Mountain Mine -	-	-	-	-	-	-	-	-	-	-	-	-	
National Steel (pellets)	1,032,297	-	631,041	-	-	-	-	-	-	-	-	-	
Sherman Mine (pellets)	-	-	-	-	-	-	-	-	-	-	-	-	
Sleepy Rock Iron Mines	-	1,221,333	245,875	-	-	-	-	-	-	-	-	-	
Pellets	6,699	-	-	-	-	-	-	-	-	-	-	-	
Concentrate	-	-	-	-	-	-	-	-	-	-	-	-	
B.C. & British Columbia	-	-	-	-	-	-	-	-	-	-	-	-	
Texada Mines (conc.)	-	-	-	-	-	-	-	-	-	-	-	-	
Wetfroth Mines Ltd. (conc.)	3,894,697	5,775,420	12,086,953	4,908,739	819,975	3,732,097	4,457,738	1,649,758	17,759 <sup>15</sup>	502,407	614,029		
Total Iron Ore	-	-	-	-	-	-	-	-	-	-	-	-	
Byproduct Iron Ores	-	-	-	-	-	-	-	-	-	-	-	-	
Cominco Ltd. <sup>16</sup> , Kimberley, B.C.	-	27,158 <sup>17</sup>	-	-	-	-	-	-	-	-	-	-	
Palco-bridge Nickel <sup>18</sup> (calcine)	18,528 <sup>19</sup>	-	-	-	-	-	-	-	-	-	-	-	
Intco, Copper Cliff, Ont. (pellets)	168,000	-	552,000	-	-	-	-	-	-	-	-	-	
Total Byproduct	166,528	27,589	552,000	-	-	-	-	-	-	-	-	-	746,117
Iron Ore	4,061,225	5,803,029	12,636,953	4,908,739	819,975	3,732,097	4,457,738	1,649,758	849,289	38,918,783 <sup>20</sup>			
Total Usable Iron Ore Shipped	-	-	-	-	-	-	-	-	-	-	-	-	

Source: Data supplied to Mineral Resources Branch by companies.

1 To the Netherlands; 2 Excluding 3,547 tons of chips; 3 Comprising 337,700 tons to the Netherlands, 342,920 tons to Italy and 52,060 tons to Belgium; 4 To Spain; 5 To Italy; 6 To France; 7 To Germany; 8 To Switzerland; 9 Comprising 547 tons of media; 10 Comprising 547 tons of media; 11 Grand Bahamas; 12 2,055,663 tons to West Germany; 13 531 tons to Finland and 16,290 tons to Grand Bahamas; 14 Closed in 1972; 15 Sinter concentrate; 16 Sinter feed; 17 Sinter feed to Australia for use in sinter-float; 18 Sinter feed to Iron-Markel Refinery (also closed in 1972); 19 Closed in 1972; 20 Of which 29,054,549 tons are exports and 9,864,234 tons are domestic shipments.

TABLE 20

STOCKS OF USABLE IRON ORE AT MINES AND SHIPPING PORTS IN CANADA, 1971-72  
(long tons)

	December 31 1971	December 31 1972	Change in Stocks
<b>Newfoundland</b>			
Iron Ore Co. of Canada, Carol Operation			
At Sept-Iles:			
Concentrates	29,336	21,894	-7,442
Pellets	1,404,977	183,607	-1,221,370
At Labrador City:			
Concentrates	145,914	164,960	+ 19,046
Pellets	273,433	864,920	+ 591,487
Wabush Mines	1,072,880	496,420	- 576,460
Wabana Mines <sup>1</sup>	55,000	55,000	-
<b>Labrador-Quebec</b>			
Iron Ore Co. of Canada, Schefferville (at Sept Iles)	3,356,887	2,572,577	-784,310
<b>Quebec</b>			
Hilton Mine, The	84,725	94,346	+9,621
Quebec Cartier Mining Co.	1,892,963	618,580	-1,274,383
<b>Ontario</b>			
Adams Mine	14,000	88,992	+74,992
Algoma Ore Division	129,121	97,583	-31,538
Caland Ore Co. Ltd.	720,451	907,682	+ 187,231
Griffith Mine, The <sup>2</sup>	5,724	8,030	+2,306
Marmoraton Mining Co.	53,134	23,997	-29,137
Moose Mountain Mine (National Steel)	50,491	75,222	+24,731
Sherman Mine	1,775	5,801	+ 4,026
Steep Rock Iron Mines Ltd.	1,057,108	963,738	-93,370
<b>British Columbia</b>			
Texada Mines Ltd.	103,559	104,298	+739
Wesfrob Mines Limited	55,603	114,337	+58,734
Total	10,507,081	7,461,984	-3,045,097

Source: Data supplied to Mineral Resources Branch by companies.

<sup>1</sup> Ceased operations June 1966; shipped from stockpile 1967-69; no ore shipped for iron making purposes in 1970-72; <sup>2</sup> Excluding stocks at Thunder Bay terminal of Valley Camp Limited.

- Nil; <sup>e</sup> Estimated.

TABLE 21

## ANALYSES OF CANADIAN IRON ORE SHIPMENTS IN 1972

	Shipments (long wet tons)	Natural Fe	Dry Analysis				Loss by Ignition	Moisture	Size Range
			Fe	P	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>			
<b>Newfoundland</b>									
Iron Ore Co. of Canada, Carol Operation	7,985,290	64.117	65.173	0.009	5.47	0.199	0.40	—	—
Carol Pellets	7,671,127	62.641	65.525	0.009	5.00	0.206	0.31	—	—
Carol Conc.	—	—	—	—	—	—	—	—	1.62
Total Carol Operation	8,656,417	64.002	65.200	0.009	5.43	0.199	0.39	—	4.40
Wabush Mines Pellets	5,312,512	64.20	65.66	—	2.96	1.85	—	—	—
Quebec-Labrador								2.23	— <i>7/8" x 1/2"</i> (size range in 1970
Quebec									
Iron Ore Co. of Canada (Schafferville)	2,458,891	52.179	57.431	0.092	10.22	1.347	1.10	—	—
Non-Bessemer	—	—	—	—	—	—	—	—	9.15
Manganiferous	—	—	—	—	—	—	—	—	—
Total, Quebec	2,458,891	52.179	57.431	0.092	10.22	1.347	1.10	—	9.15
Labrador									
Iron Ore Co. of Canada (Schafferville)	2,493,718	55.340	60.923	0.064	6.92	0.139	1.59	—	—
Non-Bessemer	—	—	—	—	—	—	—	—	9.16
Manganiferous	—	—	—	—	—	—	—	—	—
Total, Labrador	2,493,718	55.340	60.923	0.064	6.92	0.139	1.59	—	9.16
Total, IOC (Schafferville)	4,952,609 <sup>2</sup>	53.771	59.190	0.078	8.56	0.739	1.35	—	9.16

TABLE 21 (cont'd)

	(long wet tons)	Shipments	Natural	Dry				Loss by	Moisture
				Fe	P	SiO <sub>2</sub>	Mn		
								Size Range	
Quebec									
Quebec Cartier Mining Co.	7,431,917	64.35	66.00	0.025	5.00	—	0.75	—	—
Concentrate								2.49	-10+200 mesh
Hilton Mine, The	855,238	67.12	67.19	0.007	2.02	0.077	0.28	0.21	1.31 0.006
Hilton Pellets								0.13	-5/8" + $\frac{1}{8}$ " <sup>1</sup>
Hilton Chips	21,758	63.74	67.31	0.007	1.87	0.077	0.23	0.20	1.27 0.016
Hilton Media	547	61.46	66.44	0.008	2.84	0.070	0.25	0.25	1.85 0.56
Total, Hilton	877,544	67.03	67.23	0.007	2.02	0.077	0.28	0.21	1.31 0.007
Ontario								0.26	—
Adams Mine									
Adams Pellets	1,092,968	65.35	65.71	0.018	4.89	0.10	0.12	0.22	0.47 0.001
Algomia Ore Division								—	0.55
Algomia Sinter (regular)	142,566	49.90	50.37	0.020	11.31	2.81	1.58	4.00	7.12 0.084
Algomia Sinter (super-fluxed)	1,652,766	48.32	48.32	0.025	9.75	2.63	1.58	9.31	7.92 0.092
Algomia Crude	1,448,3	36.96	—	—	—	—	—	—	—
Total, Algomia	1,796,780	48.45	48.48	0.025	9.90	2.64	1.58	8.89	7.86 0.091
Caland Ore Company Limited									
Caland Pellets	1,115,035	62.02	63.40	0.010	6.14	0.30	0.98	0.20	0.25
Warren Coarse	1,783,289	56.40	58.67	0.022	5.15	0.24	0.54	0.18	0.22
Total, Caland	1,898,324	60.29	61.45	0.015	5.73	0.28	0.98	0.19	0.24
Griffith Mine, The									
Pellets	1,380,151	67.16	67.19	0.02	3.11	0.05	0.39	—	—
Kirk Pellets		—	—	—	—	—	—	—	0.05
Marmoraon Mining Co.									8.5% - 5/8" + 3/8"
Marmora Pellets	489,763	65.4	65.4	0.007	3.61	0.08	0.67	1.42	0.76 0.013
National Steel Corporation									
of Canada Ltd.									
Moore Mt. Pellets	587,441	62.540	63.390	0.009	8.03	0.015	0.59	—	—
Chips	53,600	58.173	61.014	0.011	11.29	0.015	0.57	—	—
Total, National Steel	641,041	62.175	63.197	0.009	8.29	0.015	0.59	—	—
								1.61	9.1% + $\frac{1}{8}$ " <sup>1</sup>

Shipment <sup>a</sup> (Long wet tons)	Natural Fe	Dry Analysis				Loss by Ignition	Nature Range <sup>b</sup>					
		SiO <sub>2</sub>	Mn	Al <sub>2</sub> O <sub>3</sub>	CaO							
Sherman Mine Pellets	1,052,297	64.97	65.55	0.018	5.54	—	0.25	0.16	0.002	0.16	0.88	-5/8" + $\frac{1}{8}$ "
Steep Rock Iron Mines Ltd. S.R. Pellets	1,467,208 6,699	62.64 53.83	62.86 57.96	0.035 —	7.37 7.15	0.24 —	1.68 —	0.15 —	0.23 —	0.007 0.050	—	0.35 7.12
S.R. Coarse	—	—	—	—	—	—	—	—	—	—	—	—
Total, Steep Rock	1,573,907	62.60	62.86	0.015	7.37	0.24	1.68	0.15	0.23	0.007	—	0.38
British Columbia	—	—	—	—	—	—	—	—	—	—	—	—
Texada Mines Ltd. Magnetic conc.	502,407	61.37	65.01	0.010	4.26	0.16	0.76	2.30	0.57	0.41	—	5.64
Wasfrob Mines Limited Sinter Feed conc.	284,020	58.37	61.26	0.02	6.16	—	1.37	—	—	1.00	—	—
Pellet Feed Conc.	330,009	63.07	69.35	0.01	1.44	—	0.51	—	—	0.28	—	4.72
Total, Wasfrob Mines	614,029	60.90	65.52	0.02	3.68	—	0.92	—	—	0.63	—	9.06
												max. 1680 micron

Source: Data supplied to Minerals Resources Branch by companies.  
 1. Including \$3,567 tons of chips. 2. Excluding 93,567 tons of chips. 3. For special use.  
 — Nil, not available or not applicable; @ Estimated.

TABLE 22

Canada, Consumption of Iron-bearing Materials at Iron-steel Plants<sup>1</sup>, 1972

	In Smelter Plant <sup>2</sup>	In Iron and Steel Furnaces		Total in Furnaces (long tons)
		From Furnaces <sup>3</sup>	From Furnaces <sup>4</sup>	
Iron Ore				
Grade and concentrate	161,871	113,611	46,619	360,299
Pellets	215,308	8,943,077	170,087	9,113,165
Sinter from mines	98,862	1,719,608	—	1,719,608
Subtotal	455,963	10,996,396	214,706	11,211,062
Slates Produced at Steel Plant		913,022 <sup>5</sup>	163	913,185
Total	455,943	11,909,318	216,849	12,126,167 <sup>5</sup>
% Fe	59.80	61.74	66.67	61.83
Other Iron-bearing Materials				
Flue dust		114,190	—	—
Scales, sponge iron, etc.	307,845	249,045	394	249,439
Total	422,035	249,045	394	249,439
% Fe	63.37	47.30	71.42	47.34

<sup>1</sup>Source: Economy Dept. of the Mineral Resources Board.

<sup>2</sup>AI = integrated producers' exclusion includes iron and steel plants located at steel works, smelters, and iron ore processing plants as well as other iron-bearing materials. Steel and coke plants, furnaces, blast furnaces, and coke ovens are not included. Total of other iron-bearing materials (except for the above large sources of iron ore); <sup>3</sup>including any slates produced at iron-bearing materials, total from ore consumption of new iron ore in all established AI; <sup>4</sup>including 11,669 million tons comprising 11,211 million tons of iron ore and 458 million tons of iron-bearing materials; <sup>5</sup>including iron ore and iron-bearing materials.

— M1.











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Ottawa, Canada K1A 0S9

Catalogue No. M38-2/172      Price: Canada: \$2.00  
ISBN 0-660 01169-7      Other countries: \$2.40

Price subject to change without notice

## PREFACE

The bulletin was prepared to continue the Canadian iron ore industry Statistics series that was developed for the Mineral Information Bulletin published from 1955 through 1970. The statistical data, when used in conjunction with the Iron Ore chapter of the Canadian Minerals Yearbook, present a comprehensive review of the iron ore industry for the years 1975 and 1976.

The data used in the compilation of the statistical tables were supplied to Mineral Development Sector by individual firms within the Canadian iron ore industry. Their co-operation and prompt responses to our requests are greatly appreciated.



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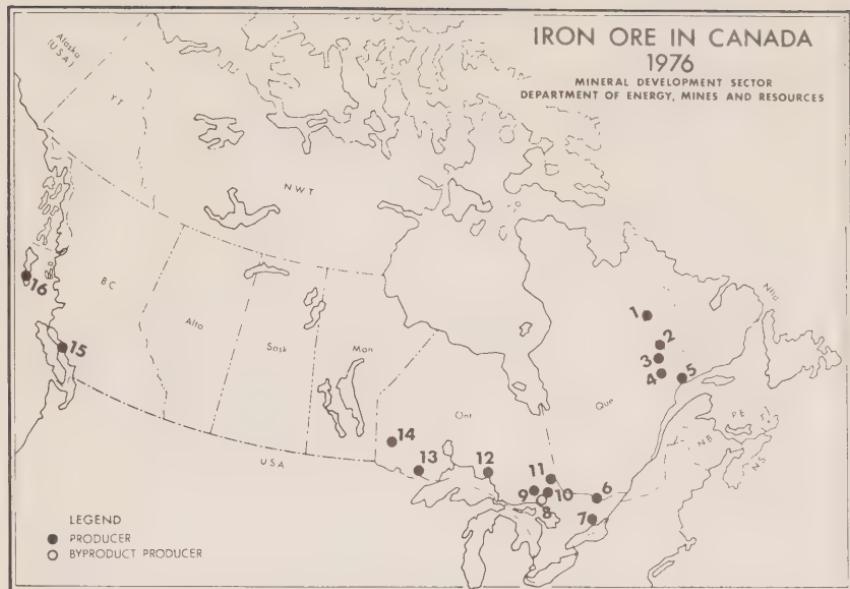
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1975 STATISTICAL REVIEW,  
BY COMPANY





### PRODUCERS

(numbers refer to numbers on map)

1. Iron Ore Company of Canada, Knob Lake Division (Schefferville)
2. Iron Ore Company of Canada, Carol Division, (Labrador City)
3. Scully Mine of Wabush Mines (Wabush)
4. Sidbec Normines Inc. (Gagnon, Fire Lake)
5. Iron Ore Company of Canada, Sept-Îles Division (Sept-Îles)
5. Pointe Noire Division of Wabush Mines (Pointe Noire)
6. The Hilton Mines (Shawville)
7. Marmoraton Mining Company, Division of Bethlehem Chile Iron Mines Company (Marmora)
9. National Steel Corporation of Canada, Limited (Capreol)
10. Sherman Mine of Dominion Foundries and Steel, Limited (Temagami)
11. Adams Mine of Dominion Foundries and Steel, Limited (Kirkland Lake)
12. Algoma Ore Division of The Algoma Steel Corporation, Limited (Wawa)
13. Caland Ore Company Limited (Atikokan)
14. Steep Rock Iron Mines Limited (Atikokan)
15. The Griffith Mine (Bruce Lake)
15. Texada Mines Ltd. (Texada Is.)
16. Wesfrob Mines Limited (Moresby Is.)

### BYPRODUCT PRODUCER

8. The International Nickel Company of Canada, Limited (Copper Cliff)

TABLE I  
CANADA, IRON ORE PRODUCERS, 1974 AND 1975

Company and Property Location	Participating Companies	Material Mined &/or Treated 1975	Product Shipped 1975	Shipments 1974	Shipments 1975
		(% Fe natural)	(% Fe dry/wet)	(000 wet tonnes)	
Adams Mine; Boston Twp., near Kirkland Lake, Ont.	Dominion Foundries and Steel, Ltd., managed by Cliffs of Canada Limited, a wholly-owned subsidiary of The Cleveland- Cliffs Iron Company	Magnetite from open pit mine (21)	Pellets (65/65)	1 160	1 153
Algoma Ore Division of The Algoma Steel Corp. Ltd.; mines and sinter plant near Wawa, Ont.	Wholly-owned	Siderite from open pit and underground mine (33)	Siderite sinter (48/48)	2 110	1 518 1
Caland Ore Co., Ltd., east arm of Steep Rock Lake, near Atikokan, Ont.	Inland Steel Co.	Hematite and goethite from open pit mine (54)	Pellets (63/63) Concentrate (58/55)	1 051 945	701 818
Griffith Mine, The; Bruce Lake, 56 kilometres south of Red Lake, Ont.	The Steel Co. of Canada, Ltd.; managed by Pickands Mather & Co.	Magnetite from open pit mine (23)	Direct-shipping ore <sup>2</sup> (58/54)	—	—
Hilton Mines, The; near Shawville, Quebec, 64 kilometres northwest of Ottawa, Ont.	The Steel Co. of Canada, Ltd., 50%; Jones & Laughlin Steel Corp., 25%; Pickands Mather & Co. (managing agent), 25%	Magnetite from open pit mine (21)	Pellets (67/67) (sponge iron)	1 594 —	1 4713 17
			Pellets (66/66)	945	785

Iron Ore Company of Canada; Schefferville, Quebec-Labrador operation	Labrador Mining and Exploration Ltd., 3.84%; Hollinger Mines Ltd., 8.27%; The Hanna Mining Co. (managing agent), 27.24%; Bethlehem Steel Corp., 19.42%; Armico Steel Corp., 6.06%; Lykes- Youngstown Corp., 6.06%; National Steel Corp., 18.20%; Republic Steel Corp., 6.06%; Wheeling-Pittsburgh Steel Corp., 4.86%; Sept-Iles, Que., pellet operation	Hematite-goethite-limonite ore (59/54) Treat ore (54/50)	Direct-shipping ore (59/54)	6 673	4 134
Carol Lakes, Labrador operation	Bethlehem Steel Corp., 19.42%; Youngstown Corp., 6.06%; National Steel Corp., 18.20%; Republic Steel Corp., 6.06%; Wheeling-Pittsburgh Steel Corp., 4.86%; Sept-Iles, Que., pellet operation	Lykes-Specular hematite and magnetic from open pit mines (39)	Pellets (64/64) Concentrate (63/62)	7 694 4 514	9 162 6 462
Marmoraton Mining Co., Division of Bethlehem Chile Iron Mines, Company; near Marmorat, Ont.	National Steel Corp. (The Hanna Mining Co. is managing agent)	Magnetite from open pit mine (42)	Pellets (64/64)	528	282
National Steel Corporation of Canada, Ltd., Moose Mountain Mine; Sudbury area, 32 kilometers north of Capreol, Ont.	National Steel Corp. (The Hanna Mining Co. is managing agent)	Magnetite from open pit mine (33)	Pellets (63/63)	697	673
Quebec Cartier Mining Company; Gagnon, Quebec	United States Steel Corp.	Specular hematite from open pit mine (35)	Specular hematite concentrate (66/64)	8 586	8 267
Mount Wright; near Fermont Quebec		Specular hematite from open pit mine (34)	Specular hematite <sup>4</sup> concentrate (66/64)	—	—

Table 1 (cont'd)

Company and Property Location	Participating Companies	Material Mined &/or Treated		Product Shipped 1975	Shipments 1974	Shipments 1975 (000 wet tonnes)
		1975	(% Fe natural)			
Sherman Mine; near Temagami, Ont.	Dominion Foundries and Steel; Limited, 90%; Tetabaga Mining Company (wholly-owned subsidiary of the Cleveland-Cliffs Iron Company), 10%. The operation and management of the mine is by Cliffs of Canada Limited, also a wholly-owned subsidiary of The Cleveland-Cliffs Iron Company.	Magnetite from open pit mines (20)	Magnetite from open pit	Pellets (66/65)	1 046	1 117
Steep Rock Iron Mines Ltd.; Steep Rock Lake, north of Attikokan, Ont.	Publicly-owned company	Hematite-goethite from open pit mine (55)	Concentrate (58/54)	Pellets (63/62)	12	5
Texada Mines Ltd.; Texada Island, B.C.	Kaiser Aluminum and Chemical Corp.	Magnetite and chalcopyrite from underground mine (31)	Magnetite concentrate (64/60)	Pellets (66/64)	331	312
Wabush Mines; Scully Mine includes mine and concentrator at Wabush, Labrador; Pointe Noire Division includes pelletizing plant at Pointe Noire, Que.	The Steel Co. of Canada Ltd., 25.6%; Dominion Foundries and Steel, Ltd., 16.4%; Youngstown Sheet and Tube Company, 15.6%; Inland Steel Co., 10.2%; Interlake, Inc., 10.2%; Wheeling-Pittsburgh Steel Corp., 10.2%; Finsider of Italy, 6.6%; and Pickands Mather & Co. (managing agent), 5.2%	Specular hematite and some magnetite from open pit mine (35)	Magnetite concentrate (66/64)	Pellets (66/64)	5 532	3 259

Westrob Mines Limited; Tau Harbour, Moresby Is., Queen Charlotte Is., B.C.	Falconbridge Nickel Mines Limited	Magnetite and chalcopyrite from open pit mines (40)	Pellet-feed con- centrate (69/63)	610
Byproduct Producers				
The International Nickel Co. of Canada, Ltd.; Copper Cliff, Ont.	Publicly-owned company	Pyrrhotite flotation concentrate (57) treated	Pellets (66/65)	517
Quebec Iron and Titanium Corp.; mine at Lac Tio, Que.;; electric smelter at Sorel, Quebec	Kennecott Copper Corp.; Gulf & Western Indus- tries, Inc. (The New Jersey Zinc Co.)	Ilmenite-hematite ore (40% Fe, 35% TiO <sub>2</sub> ) from open pit mine at Lac Tio, beneficiated and calcined at Sorel	Ilmenite calcine electric smelted to TiO <sub>2</sub> slag and various grades of desulphurized pig iron ore remelt iron	627
				4215
				508

Sources: Company reports, personal communication.

1 Includes 208 825 tonnes of regular sinter, 1 307 845 tonnes of superfluxed sinter, 1 264 tonnes of crude ore shipped as food supplement to livestock industry. 2 Excludes 246 978 tonnes of direct-shipping ore sent to Steep Rock Iron Mines Ltd.

3 Includes 36 915 tonnes of oxide pellets consumed in the SL-RN direct reduction kiln, to produce 14 970 tonnes of sponge iron. 4 Mount Wright commenced production in late-1975, but no shipments were made in 1975. 5 Pig iron. — Nil.

TABLE 2  
CRUDE IRON ORE MINED IN CANADA, BY VARIETY AND GRADE, 1975

	Hemanite		Magnetite		Siderite	
	Tonnes	% Fe Nat.	Tonnes	% Fe Nat.	Tonnes	% Fe Nat.
Newfoundland						
Iron Ore Company of Canada	38 342 937	39.20	—	—	—	—
Carol Division	9 279 225	34.93	—	—	—	—
Wabush Mines						
Labrador — Quebec						
Iron Ore Company of Canada	4 680 330	54.09 <sup>1</sup>	—	—	—	—
Schefferville — Direct Shipping	6 516 379	50.60 <sup>1,2</sup>	—	—	—	—
— Treat ore						
Quebec						
Hilton Mine, The	—	—	3 102 444	20.70	—	—
Quebec Cartier Mining Company	16 889 668	35.10	—	—	—	—
Gagnon	1 084 122	34.00	—	—	—	—
Mount Wright						
Ontario						
Adams Mine	—	—	4 354 926	20.71	—	—
Algoma Ore Division	1 385 656	54.32	—	—	2 589 197	33.10
Caland Ore Co.	—	—	5 272 049	—	—	—
Griffith Mine, The	—	—	876 626 <sup>3</sup>	23.49	—	—
Marmaraton Mining Co.	—	—	1 646 404	41.88 <sup>4</sup>	—	—
Moose Mountain Mine	—	—	—	32.56	—	—
(National Steel)	—	—	4 327 292	19.52	—	—
Sherman Mine	1 281 523	55.38	—	—	—	—
Steep Rock Iron Mines						
British Columbia						
Texada Mines Ltd.	—	—	871 439	31.17	—	—
Westrob Mines Limited	—	—	1 937 657	39.29	—	—
Total	79 454 840	40.10	22 388 837	24.85	2 589 197	33.10

Source: Data supplied to Mineral Development Sector by companies.

1 Analysis of shipments. 2 Treat ore for Septiles Division concentrator and pelletizing operations.

3 Cobber product. 4 Grade of cobber product.

TABLE 3  
CANADA, CRUDE IRON ORE MINED, BY MINING METHOD, 1975

	Open Pit		Underground		Tonnes	% Fe Nat.	Tonnes	% Fe Nat.	Tonnes	Total	% Fe Nat.
	Tonnes	% Fe Nat.	Tonnes	% Fe Nat.							
Newfoundland											
Iron Ore Company of Canada	38 342 937	39.20	—	—	—	—	38 342 937	39.20	39 279 225	34.93	39.43
Carol Division	9 279 225	34.93	—	—	—	—	9 279 225	34.93	39 279 225	34.93	39.43
Wabush Mines											
Labrador — Quebec											
Iron Ore Company of Canada	4 680 330	54.09 <sup>1</sup>	—	—	—	—	4 680 330	54.09	6 516 379	50.60 <sup>1,2</sup>	50.60
Schefferville — Direct — shipping	6 516 379	50.60 <sup>1,2</sup>	—	—	—	—	6 516 379	50.60	—	—	—
— Treat ore											
Quebec											
Hilton Mine, The	3 102 444	20.70	—	—	—	—	3 102 444	20.70	—	—	—
Quebec Cartier Mining Company	16 884 668	35.10	—	—	—	—	16 884 668	35.10	1 084 122	34.00	34.00
Gagnon	1 084 122	34.00	—	—	—	—	1 084 122	34.00	—	—	—
Mount Wright											
Ontario											
Adams Mine	4 354 926	20.71	—	—	—	—	4 354 926	20.71	—	—	—
Algoma Ore Division	—	—	2 589 197	—	33.10	—	2 589 197	33.10	—	—	—
Caland Ore Co.	1 385 656	54.32 <sup>3</sup>	—	—	—	—	1 385 656	54.32	—	—	—
Griffith Mine, The	5 272 049	23.49	—	—	—	—	5 272 049	23.49	—	—	—
Marmaraton Mining Co.	876 626 <sup>4</sup>	41.88 <sup>5</sup>	—	—	—	—	876 626	41.88	—	—	—
Moose Mountain Mine	1 646 404	32.56	—	—	—	—	1 646 404	32.56	—	—	—
(National Steel)	4 327 292	19.52	—	—	—	—	4 327 292	19.52	1 397 593 <sup>6</sup>	55.31	55.31
Sherman Mine	1 397 593 <sup>6</sup>	55.31	—	—	—	—	1 397 593 <sup>6</sup>	55.31	—	—	—
Steep Rock Iron Mines											
British Columbia											
Texada Mines Ltd.	686 585	31.17	184 854	31.17	—	—	871 439	31.17	1 884 919	39.14	39.14
Wesfrob Mines Limited	1 884 919	39.14	52 738	44.51	—	—	1 937 657	39.29	—	—	—
Total	101 722 155	36.77	2 826 789	33.19	104 548 944	36.67					

Source: Data supplied to Mineral Development Sector.

<sup>1</sup> Analysis of shipments. <sup>2</sup> Treat ore for Sept-Iles Division concentrator and pellet plant.

<sup>3</sup> Excludes direct shipping ore sent to Steep Rock Iron Mines Ltd.

<sup>4</sup> Cobber product. <sup>5</sup> Grade of cobber.

<sup>6</sup> Includes 116 070 tonnes from Caland Ore Co, Ltd. — Nil.

TABLE 4

## DISPOSITION OF CRUDE IRON ORE MINED IN CANADA, 1975

	For Direct Shipping		To Concentration Plant		To Concentration and Agglomeration Plant		Total	
	Tonnes	% Fe Nat.	Tonnes		Tonnes		Tonnes	% Fe Nat.
			% Fe Nat.	% Fe Nat.	% Fe Nat.	% Fe Nat.		
Newfoundland								
Iron Ore Company of Canada	—	—	—	—	38 342 937	39.20	38 342 937	39.20
Carol Division	—	—	—	—	9 279 225	34.93	9 279 225	34.93
Wabush Mines	—	—	—	—	—	—	—	—
Labrador — Quebec								
Iron Ore Company of Canada	4 680 330	54.09	—	—	—	—	4 680 330	54.09
Schefferville Division	—	—	—	—	6 516 379	50.60	6 516 379	50.60
Sept-Îles Division	—	—	—	—	—	—	—	—
Quebec								
Hilton Mine, The	—	—	—	—	—	—	3 102 444	20.70
Quebec Cartier Mining Company	—	—	16 884 668	35.10	—	—	—	—
Gagnon	—	—	1 084 122	34.00	—	—	16 884 668	35.10
Mount Wright	—	—	—	—	—	—	1 084 122	34.00
Ontario								
Adams Mine	1 264	34.20	—	—	4 354 926	20.71	4 354 926	20.71
Algoma Ore Division	—	—	—	—	2 587 933	33.10	2 589 197	33.10
Caland Ore Co.	—	—	—	—	1 385 6563	54.32	1 385 656	54.32
Griffith Mine, The	—	—	—	—	5 272 049	23.49	5 272 049	23.49
Marmaton Mining Co.	—	—	—	—	876 6264	41.885	876 626	41.88
Moose Mountain Mine (National Steel)	—	—	—	—	1 646 404	32.56	1 646 404	32.56
Sherman Mine	—	—	528 073	49.15	4 327 292	19.52	4 327 292	19.52
Steep Rock Iron Mines	—	—	—	—	869 5206	59.05	1 397 593	55.31
British Columbia								
Texada Mines Ltd.	—	—	871 439	31.17	—	—	871 439	31.17
Wesfrob Mines Limited	—	—	1 937 657	39.29	—	—	1 937 657	39.29
Total	4 681 594	54.08	21 305 399	35.61	78 561 391	35.92	104 548 944	36.67

Source: Data supplied to Mineral Development Sector by companies.

1Analysis of shipments.

2Treat ore for Sept-Îles Division concentrator and pellet plant.

3Excludes direct-shippping ore sent to Steep Rock Iron

Mines Ltd.

4Cobber product.

5Grade of cobber.

6Includes 116,070 tonnes from Caland Ore Co. Ltd. — Nii.

TABLE 5  
USABLE IRON ORE PRODUCED IN CANADA, BY TYPE OF PRODUCT, 1975

	Direct-Shipping		Concentrates		Agglomerates		Total	
	Tonnes	% Fe Nat.	Tonnes	% Fe Nat.	Tonnes	% Fe Nat.	Tonnes	% Fe Nat.
Newfoundland								
Iron Ore Company of Canada	—	—	6 325 933	63.10 <sup>1</sup>	9,670,328	64.00 <sup>2</sup>	15 996 261	63.64
Carol Division	—	—	—	—	2,990,584	64.08	2 990 584	64.08
Wabush Mines								
Labrador — Quebec								
Iron Ore Company of Canada	4 680 330	54.10	—	—	—	—	4 680 330	54.10 <sup>3</sup>
Schafferville Division	—	—	—	—	3 204 784	62.40	3 204 784	62.40
Sept-Îles Division								
Quebec								
Hilton Mine, The	—	—	515	62.49	813 122	65.98	813 637	65.98
Quebec-Cartier Mining	—	—	7 981 048	63.90	—	—	7 981 048	63.90
Gagnon	—	—	422 676	63.90	—	—	422 676	63.90
Mount Wright								
Ontario								
Adams Mine	—	—	—	—	1 158 307	64.95	1 158 307	64.95
Algoma Ore Division	1 264	34.20	—	—	1 641 932	48.50	1 643 196	48.50
Caland Ore Co.	—	—	390 880	56.00	835 691	63.13	1 226 571	60.86
Griffith Mine, The	—	—	—	—	1 472 211	66.72	1 472 211	66.72
Marmot Mountain Mining Co.	—	—	—	—	486 978	64.00	486 978	64.00
Moose Mountain Mine	—	—	—	—	658 360	62.66	658 360	62.66
(National Steel)								
Sherman Mine	—	—	—	—	1 117 703	65.06	1 117 703	65.06
Steep Rock Iron Mines	4 838	50.16	—	—	1 135 589	62.30	1 140 427	62.25
British Columbia								
Texada Mines Ltd.	—	—	311 844	60.32	—	—	311 844	60.32
Westfrob Mines Limited	—	—	1 021 655	65.78	—	—	1 021 655	65.78
Total Iron Ore	4 686 432	54.09	16 454 551	63.45	25 185 589	62.97	46 326 572	62.24
Byproduct Iron Ore	—	—	—	—	541 461	64.90	541 461	64.90
Inco (Copper Cliff, Ont.)								
Total Usable Iron	4 686 432	54.09	16 454 551	63.45	25 727 050	63.01	46 868 033	62.27
Ore Produced								

Source: Data supplied to Mineral Development Sector by companies.

<sup>1</sup>Difference between concentrate produced and concentrate sent to pellet plant.

<sup>2</sup>Dry analysis.

<sup>3</sup>Analysis of shipments.

<sup>4</sup>Includes 11 691 tonnes of mill scale grading 70.00 per cent Fe. — Ni.

TABLE 6  
WASTE/ORE CONCENTRATION RATIOS AT CANADIAN IRON ORE MINES, 1975

	Open pit Waste	Underground Waste	Iron Ore Mined	Usable Iron Ore Produced (tonnes)	Waste/Ore Ratio	Waste/Usable Ore Ratio	Concentration Ratio	Fe Recovery
Newfoundland								
Iron Ore Company of Canada	10 701 784 <sup>1</sup>	—	38 342 937	15 996 262 <sup>2</sup>	0.279	0.669	2.397	0.677
Carol Division	4 167 977	—	9 279 225	2 990 584	0.449	1.394	3.103	0.591
Wabush Mines								
Labrador — Quebec								
Iron Ore Company of Canada	21 750 256 <sup>1</sup>	—	4 680 330 <sup>3</sup>	4 680 330	1.943	2.758	1.000	1.000
Schefferville			6 516 379 <sup>4</sup>	3 204 785			2.033	0.606
Quebec								
Hilton Mine, The	766 586	—	3 102 444	8 136 37	0.247	0.942	3.813	0.836
Quebec Cartier Mining Company	1 635 836 <sup>1</sup>	—	16 884 668	7 981 048	0.097	0.205	2.116	0.861
Gagnon	5 572 001 <sup>1</sup>	—	1 084 122	422 676	5.140	13.183	2.565	0.733
Mount Wright								
Ontario								
Adams Mine	1 997 513	—	4 354 926	1 158 307	0.459	1.725	3.760	0.834
Algoma Ore Division		207 220	2 589 196	1 643 196	0.080	0.126	1.576	0.930
Caland Ore Co. <sup>5</sup>	7 485 963	—	1 385 656	1 226 571	5.402	6.103	1.130	0.992 <sup>6</sup>
Griffith Mine, The	6 123 088	—	5 272 049	1 472 211	1.161	4.159	3.581	0.793
Marmoration Mining Co.	2 560 791	—	1 753 252 <sup>6</sup>	486 978	1.461	5.259	3.600	0.849 <sup>6</sup>
Moose Mountain Mine (National Steel)	548 174 <sup>1</sup>	—	1 646 403	658 360	0.333	0.833	2.502	0.770
Sherman Mine	2 410 866	—	4 392 292	1 117 703	0.557	2.157	3.872	0.861
Steep Rock Iron Mines	11 949 929	—	1 397 593 <sup>7</sup>	1 140 427 <sup>7</sup>	8.550	10.478	1.225 <sup>e</sup>	0.918 <sup>e</sup>
British Columbia								
Texada Mines Ltd.	12 256	2 031	871 439	311 844	0.016	0.046	2.794	0.693
Westrob Mines Limited	1 074 324	20 974	1 937 657	102 654	0.554	1.072	1.896	0.883

Source: Data supplied to Mineral Development Sector by companies.

<sup>1</sup> Calculated from data supplied by companies in cubic metres by using a factor of 2,658 tonnes equals 1 cubic metre. <sup>2</sup> Pellets and concentrate. <sup>3</sup> Schefferville direct-ship ore. <sup>4</sup> Schefferville test ore. <sup>5</sup> Excludes direct-ship ore sent to Steep Rock Iron Mines Ltd. <sup>6</sup> Estimated tonnes of cobber product multiplied by a factor of 2. <sup>7</sup> Includes 116,070 tonnes of direct-ship ore from Caland Ore Co. Ltd.

<sup>e</sup>Estimated; — N/A.

TABLE 7  
USABLE IRON ORE SHIPPED BY CANADIAN PRODUCERS, BY TYPE OF PRODUCT, 1975

	Direct-Shipping		Concentrates		Agglomerates		Total Tonnes	% Fe Nat.		
	Tonnes	% Fe Nat.	Tonnes	% Fe Nat.	Tonnes	% Fe Nat.				
Newfoundland										
Iron Ore Company of Canada	—	—	6 461 743	63.15	9 161 822	63.96	15 623 625	63.62		
Carol Division	—	—	—	—	3 253 224	64.11	3 258 224	64.11		
Wabush Mines										
Labrador - Quebec										
Iron Ore Company of Canada	4 134 794	54.10	—	—	—	—	4 134 794	54.10		
Knob Lake Division	—	—	—	—	3 005 396	62.13	3 005 396	62.13		
Sept Iles Division										
Quebec										
Hinton Mine, The	—	—	—	—	785 398	65.86	785 398 <sup>1</sup>	65.86		
Quebec Cartier Mining Company	—	—	8 266 558	63.93	—	—	8 266 558	63.93		
Gagnon										
Ontario										
Adams Mine	1 264	34.20	—	—	1 153 648	64.95	1 153 648	64.95		
Algoma Ore Division	—	—	700 968	55.30	1 516 670	48.32	1 517 334 <sup>2</sup>	48.32		
Caland Ore Co.	—	—	—	—	818 061	63.13	1 519 029 <sup>3</sup>	59.52		
Griffith Mine, The	—	—	—	—	1 470 918	66.72	1 470 918 <sup>4</sup>	66.72		
Manitoulin Mining Co.	—	—	—	—	672 391	64.00	282 391 <sup>5</sup>	64.00		
Moose Mountain Mine	—	—	—	—	672 682	62.27	672 682 <sup>6</sup>	62.27		
(National Steel)										
Sherman Mine	—	—	—	—	1 116 663	65.06	1 116 663 <sup>7</sup>	65.06		
Steep Rock Iron Mines	4 838	50.16	—	—	1 121 936	62.30	1 126 775 <sup>8</sup>	62.25		
British Columbia										
Texada Mines Ltd.	—	—	311 844	60.32	—	—	311 844	60.32		
Westrau Mines Ltd.	—	—	1 021 654	65.78	—	—	1 021 654	65.78		
Total Iron Ore										
Byproduct Iron Ore										
Inco (Copper Cliff, Ont.)	—	—	—	—	517 294	64.90	517 294	64.90		
Total Usable Iron Ore Shipped	4 140 896	54.09	16 762 767	63.31	24 881 264	63.00	45 784 927	62.31		

Source: Data supplied to Mineral Development Sector by companies.

<sup>1</sup> Includes 775 tonnes of concentrates for heavy media. <sup>2</sup> Includes 323 tonnes of sinter shipped to United States for special use. <sup>3</sup> Excludes 246 990 tonnes of direct shipping ore sent to Steep Rock Iron Mine Ltd.

<sup>4</sup> Includes 36 915 tonnes of pellets shipped to the SL-RN kiln at the Griffith Mine, for sponge iron production. <sup>5</sup> Includes 52 676 tonnes of chips grading 57.69 per cent Fe. <sup>6</sup> Includes 11 691 tonnes of mill scale grading 70.00 per cent Fe. <sup>7</sup> Includes 116 070 tonnes of direct shipping ore from Caland Ore Co. Ltd. and consumed during agglomerating.

— Nil.

TABLE B  
USABLE IRON ORE SHIPPED BY CANADIAN PRODUCERS, BY DESTINATION, 1975

Iron Ore Producers	Canada		United States		All Rail (Tonnes)	Great Lakes Port	Other Port	All Rail (Tonnes)	Britain	I CSC	Japan	Other	Total	
	All Rail	Other	Great Lakes	Other										
Newfoundland														
Iron Ore Co. of Canada	—	—	—	—	—	—	—	506 621	3 037 147	2 917 975	—	6 161 743	—	
Carol Div. (conc.)	—	1 167 448	1 513 311	—	—	—	—	—	1 684 271	299 256	560 695	—	9 161 882	—
Carol Div. (pellets)	—	1 777 056	1 281 699	—	—	—	—	—	199 469 <sup>1</sup>	—	—	—	3 258 224	—
Wabush Mines (pellets)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Labrador - Quebec														
Iron Ore Co. of Canada	—	—	—	—	—	—	—	580 734	711 756	—	—	4 134 794	—	
Scotlerville direct- shipping ore	—	135 531	2 568 274	361 591	—	—	—	—	—	—	—	—	3 005 396	—
Septiles pellets	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Quebec														
Hilton Mines, The (pellets) (concentrates)	—	4 064	3 033 916	98 557	—	264 086	—	—	—	—	—	—	350 536	—
Quebec Carrier Mining Co.	—	521 332	—	—	—	—	—	—	—	—	—	—	785 398	—
Ontario														
Adams Mine (pellets)	1 153 648	—	—	—	—	323 <sup>2</sup>	—	—	—	—	—	—	1 153 648	—
Algoma Ore Division	1 428 269	88 078	—	—	1 264	—	—	—	—	—	—	—	1 517 934	—
Collard Ore Co. Direct shipping	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Concentrates	—	—	700 968	—	—	—	—	—	—	—	—	—	700 968	—
Pellets	—	—	818 061	—	—	—	—	—	—	—	—	—	818 061	—
Griffith Mine, The (pellets)	1 434 003	36 915 <sup>3</sup>	—	—	—	—	—	—	—	—	—	—	1 470 918	—
Marmaraton Mining Co. (pellets)	—	—	276 097	—	6 294	—	—	—	—	—	—	—	282 391	—
Moose Mountain Mine - National Steel	—	—	672 682	—	—	—	—	—	—	—	—	—	672 682	—
Sherman Mine (pellets)	1 116 663	—	—	—	—	—	—	—	—	—	—	—	1 116 663	—
Steep Rock Iron Mines Ltd. (pellets)	—	972 253	149 663	—	—	—	—	—	—	—	—	—	1 121 936	—
(concentrates)	4 839	—	—	—	—	—	—	—	—	—	—	—	4 839	—
British Columbia														
Texada Mines Ltd. (conc.)	—	—	—	—	—	—	—	—	—	311 844	—	311 844	—	—
Westrock Winsted, Ont. (conc.)	—	—	—	289 808	—	—	—	—	—	697 977	33 869 <sup>4</sup>	1 021 654	—	—
Byproduct Iron Ore Producers														
Inco Copper Cliff, Ont. (pellets)	13 076	31 036	462 760	—	10 522	—	—	—	—	—	—	—	517 394	—
Total Usable Iron Ore Shipped	5 671 830	4 212 361	13 163 202 5	784 624	281 206	2 622 894	8 671 639	4 727 052	945 100	45 784 927	—	—	—	—

Source: Data supplied to Mineral Development Sector by companies.

1Italy. 2Sinter for special use. 3Shipped to SL RN kiln at Griffith Mine for sponge iron production. 4Australia.—Nil.

TABLE 9

## STOCKS OF USABLE IRON ORE AT MINES AND SHIPPING PORTS IN CANADA, 1974 AND 1975

	December 31, 1974	December 31, 1975	Change in Stocks
	(tonnes)		
<b>Newfoundland</b>			
Iron Ore Co. of Canada			
At Sept-Îles			
Concentrates	164 170	116 292	- 47 878
Pellets — Carol Lake	448 074	1 173 901	+ 725 827
— Sept-Îles	317 966	517 355	+ 199 389
At Labrador City			
Concentrates	363 301	184 911	- 178 390
Pellets	316 123	98 742	- 217 381
Wabush Mines	582 398	314 758	- 267 640
<b>Labrador — Quebec</b>			
Iron Ore Co. of Canada			
Schefferville (at Sept-Îles)			
Direct-Shipping	3 552 300	5 651 615	+ 2 099 315
Plant feed	3 692 715	3 880 481	+ 187 766
Quebec			
Hilton Mines, The	82 711	110 950	+ 28 239
Quebec Cartier Mining Co.			
Gagnon	1 007 918	722 409	- 285 509
Mount Wright	—	422 676	+ 422 676
Ontario			
Adams Mine	166 787	168 523	+ 1 736
Algoma Ore Division	23 502	148 774	+ 125 272
Caland Ore Co. Ltd.	1 213 110	663 260	- 549 850
Griffith Mine, The <sup>1</sup>	21 800	23 093	+ 1 293
Marmoraton Mining Co.	11 770	158 300	+ 146 530
Moose Mountain Mine (National Steel)	41 288	31 209	- 10 079
Sherman Mine	—	—	—
Steep Rock Iron Mines, Ltd.	956 731	767 132	- 189 599
British Columbia			
Texada Mines Limited	145 808	166 705	+ 20 897
Wesfrob Mines Limited	94 722	139 478	+ 44 756
<b>Total</b>	<b>13 203 194</b>	<b>15 460 564</b>	<b>+ 2 257 370</b>

<sup>1</sup>Excluding stocks at Thunder Bay. — Nil.

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TABLE 10  
ANALYSIS OF CANADIAN IRON ORE SHIPMENTS IN 19

Labrador	Sept-Iles Pellets	1 736 033	63.68	N/A	—	—	—	—	—	—
	Sept-Iles concentrate	—	—	—	—	—	—	—	—	—
Total Sept-Iles	Operation	3 005 396	62.13	N/A	—	—	—	—	—	—
Quebec	Quebec Cartier Mining Co.	8 266 558	63.93	65.77	0.02	5.01	—	0.50	2.80	—10 mesh + 200 mesh
	Concentrate									
Hilton Mines The	Hilton Pellets	784 623	65.86	66.00	0.01	2.31	0.08	0.32	0.22	2.25 0.01 0.19 +3/8" -5/8"
	Hilton Chips	—	—	—	—	—	—	—	—	—
Hilton Media	Total Hilton Mines	775 398	62.49	67.47	0.01	2.14	0.07	0.24	0.23	1.49 0.61 0 7.38 60% -325 mesh
Ontario	Adams Mine	1 153 648	64.95	65.46	0.02	5.03	0.09	0.33	0.20	0.40 0.06 0.78 86.8% +3/8"
	Adams Pellets									
Algoma Ore Division	Algoma Sinter (regular)	208 825	50.99	51.44	0.02	10.10	3.00	1.55	5.25	7.59 0.07 1.19 0.821
	Algoma Sinter (super-fluxed)	1 307 845	—	47.89	0.03	9.85	2.68	1.55	10.56	7.35 0.10 1.19 0.00
Algoma Crude	Total Algoma	1 1 264	34.20	—	—	—	—	—	—	—
		1 517 934	48.32	48.37	0.03	9.89	2.72	1.55	9.18	7.39 0.10 1.19 0.111
Caland Or Company Limited	Caland Pellets	818 061	63.13	63.47	0.02	6.03	0.24	1.33	—	0.00 — 0.44
	Warren Coarse	162 990	56.04	57.68	0.03	6.26	0.16	0.55	—	0.00 — 2.86
Scott Fines	627 093	84.49	58.15	0.02	6.46	0.21	1.00	—	0.00 — 6.33	
Sam Coarse old	15 143	57.00	58.62	0.03	5.02	0.16	0.77	—	0.00 — 2.77	
Sam Coarse new	142 731	56.43	58.55	0.03	5.37	0.16	0.71	—	0.00 — 3.91	
Total Caland		1 766 018	58.92	60.67	0.02	6.13	0.21	1.09	—	0.00 2.97
Griffith Mine, The	Pellets	1 470 918	66.72	66.78	0.02	3.57	0.07	0.40	0.06	84.7% +3/8" to 5/8"

TABLE 10 (cont'd)

	Shipments (wet tonnes)	Natural Fe	Dry Analysis (per cent)					Loss by Ignition	Moisture	Size Range
			P	SiO <sub>2</sub>	Mn	Al <sub>2</sub> O <sub>3</sub>	CaO			
<b>Marmaraton Mining Co.</b>										
Pellets	282 391	—	64.00	0.01	4.34	0.09	0.80	1.70	1.22	0.01
National Steel Corporation of Canada, Limited	620 006	62.66	63.35	0.01	8.30	0.01	0.42	—	—	—
Pellets	52 676	57.69	59.94	0.01	12.31	0.01	0.43	—	—	1.09
Chips	—	—	—	—	—	—	—	—	3.88	97.22% + 1/4"
Total National Steel	672 682	62.27	63.08	0.01	8.61	0.01	0.42	—	—	4.52% + 1/4"
—	—	—	—	—	—	—	—	—	1.31	89.96% + 1/4"
<b>Sherman Mine</b>										
Pellets	1 116 663	65.06	65.62	0.03	5.54	0.06	0.38	0.20	0.36	0.021
Steep Rock Iron Mines Ltd.	1 121 936	62.30	62.60	—	7.60	0.26	1.60	—	0.01	—
Pellets	—	—	—	—	—	—	—	—	—	—
SR Fines	—	—	—	—	—	—	—	—	—	—
Total Steep Rock	1 121 936	62.30	62.60	—	7.60	0.26	1.60	—	0.01	—
—	—	—	—	—	—	—	—	—	0.58	—
<b>British Columbia</b>										
Texada Mines Ltd.	311 844	60.32	63.87	0.01	4.91	0.15	0.78	2.33	0.63	1.02
Magnetic concentrate	—	—	—	—	—	—	—	—	—	5.60
Westfrob Mines Ltd.	412 001	—	60.48	0.04	5.62	—	2.27	—	1.05	10 mesh
Sinter Feed	—	—	—	—	—	—	—	—	—	—
Pellet Feed	609 653	—	69.36	0.02	1.46	—	0.56	—	0.26	5.40
Total Westfrob	1 021 654	—	65.78	0.02	3.14	—	1.25	—	0.58	80% - 1000 microns
—	—	—	—	—	—	—	—	—	—	—
<b>Byproduct Ore</b>										
The International Nickel Company of Canada Ltd.	517 394	64.90	66.50	0.00	2.65	0.03	0.73	0.49	0.32	0.008
—	—	—	—	—	—	—	—	—	2.03	—

1 Gain on ignition. — Nil.

TABLE 11  
CANADIAN CONSUMPTION OF IRON-BEARING MATERIALS AT IRON AND STEEL PLANTS<sup>1</sup>, 1975

	In Sinter Plants <sup>2</sup>	In Direct Reduction Plants	In Iron and Steel Furnaces		
			(tonnes)	Pig Iron Furnaces	Steel Furnaces
Iron Ore					
Crude and concentrates	234 257	—	229 247	30 917	260 164
Pellets	180 902	544 313	10 446 537	65 138	10 511 675
Sinter	76 615	—	1 401 393	—	1 401 393
Subtotal	491 774	544 313	12 077 177	96 055	12 173 232
Sinter produced at					
Steel plant	—	—	1 138 173 <sup>3</sup>	—	1 138 171
Total	491 774	544 313	13 215 347	96 055	13 311 402 <sup>4</sup>
% Fe	58.29	66.70	61.99	65.45	62.01
Other iron-bearing materials					
Flue dust	145 099	—	—	—	—
Scale, reduced pellets, etc.	507 247	—	457 773	—	457 773
Total	652 346	—	457 773	—	457 773
% Fe	50.24	—	26.94	—	26.94

Source: Company data supplied to Mineral Development Sector.

<sup>1</sup>All integrated producers, except Quebec Iron and Titanium Corp. <sup>2</sup>Sinter plants located at steel works consume "new iron ore", "screenings", as well as other iron-bearing materials.

<sup>3</sup>Sinter produced mainly from 491 774 tonnes of "new iron ore" and 646 397 tonnes of other iron-bearing materials. <sup>4</sup>Includes any sintered iron-bearing materials. Total iron ore consumption of "new iron ore" is an estimated 13.21 million tonnes, comprising 12.173 million tonnes of iron ore in furnaces, 0.545 million tonnes of pellets in direct reduction plants and 0.492 million tonnes of iron ore fines in sinter plants. — Nil.



1976 STATISTICAL REVIEW,

BY COMPANY

TABLE 12  
CANADA, IRON ORE PRODUCERS, 1975 AND 1976

Company and Property Location	Participating Companies	Material Mined and/or Treated 1976	Product Shipped 1976	(% Fe natural)	(% Fe dry/wet)	Shipments 1975	Shipments 1976
Adams Mine; Boston Twp., near Kirkland Lake, Ont.	Dominion Foundries and Steel, Ltd.; managed by Cliffs of Canada Limited, a wholly-owned subsidiary of The Cleveland-Cliffs Iron Company	Magnetite from open pit mine (19)	Pellets (66/65)			1 153	1 197
Algoma Ore Division of The Algoma Steel Corp., Ltd.; mines and sinter plant near Wawa, Ont.	Wholly-owned	Siderite from underground mine (33)	Siderite sinter (48/48)			1 518	1 865 <sup>1</sup>
Caland Ore Co., Ltd.; east arm of Steep Rock Lake, near Attikokan, Ont.	Inland Steel Co.	Hematite and goethite from open pit mine (54)	Pellets (63/63) Concentrate (56/58)			701	880
Griffith Mine, The; Bruce Lake, 56 kilometres south of Red Lake, Ont.	The Steel Co. of Canada, Ltd.; managed by Pickands Mather & Co.	Magnetite from open pit mine (23)	Pellets (67/66) Sponge iron (90/82)			1 471	1 579 <sup>2</sup>
Hilton Mines, The; near Shawville, Quebec, 64 kilometres northwest of Ottawa, Ont.	The Steel Co. of Canada Ltd., 50%; Jones & Laughlin Steel Corp., 25%; Pickands Mather & Co. (managing agent), 25%	Magnetite from open pit mine (17)	Pellets (66/66)			785	657
Iron Ore Company of Canada; Schefferville, Quebec— Labrador operation	Labrador Mining and Ex- ploration Company Ltd., 4.73%; Hollinger Mines Ltd., 10.17%; The Hanna Mining Co. (managing agent), 26.37%; Bethlehem Steel Corp.	Hematite-goethite-limonite from open pit mines (54)	Direct-shipping ore (50/54)			4 134	4 125

Carol Lake, Labrador operation	18.80%; Armco Steel Corp., 5.87%; Lykes-Youngstown Corp., 5.87%; National Steel Corp., of Canada Limited, 17.62%; Republic Steel Corp 5.87%; Wheeling-Pittsburgh Steel Corp., 4.70%	Specular hematite and Magnetite from open pit mines (39)	Pellets (66/64) Concentrate (66/63)	9 162 6 462	10 085 7 301
Sept-Îles, Que. pellet operation		Hematite-goethite-limonite from open pit mines, Schefferville area treat ore (53)	Pellets (63/61)	3 005	3 585
Marmaraton Mining Co., Division of Bethlehem Chile Iron Mines, Company; near Marmora, Ont.	Bethlehem Steel Corp.	Magnetite from open pit mine (41)	Pellets (66/66)	282	462
National Steel Corporation of Canada, Ltd., Moose Mountain Mine; Sudbury area, 32 kilometres north of Capreol, Ont.	National Steel Corp. of Canada Limited (The Hanna Mining Co. is managing agent)	Magnetite from open pit mine (33)	Pellets (63/62)	673	627
Quebec Cartier Mining Company; Mount Wright, near Fermont, Quebec	United States Steel Corp.	Specular hematite from open pit mine (33)	Specular hematite <sup>3</sup> concentrate (66/64)	—	14 137 <sup>4</sup>
Sidbec-Norminnes Inc.; Gagnon and Fire Lake, Quebec	Sidbec-Dosco Ltd., 50.1%; British Steel Corp., 41.67%; Quebec Cartier Mining Co., 8.23%	Specular hematite from open pit mine (36)	Specular hematite concentrate (66/64)	8 267	8 267
Sherman Mine; near Temagami, Ont.	Dominion Foundries and Steel, Limited, 90%; Temagaga Mining Company (wholly-owned subsidiary of The Cleveland-Cliffs Iron Company), 10%. The operation and management of the mine is by Cliffs of Canada Limited, also a wholly-owned subsidiary of The Cleveland-Cliffs Iron Company	Magnetite from open pit mines (21)	Pellets (66/65)	1 117	1 093

Table 12 (cont'd)

Company and Property Location	Participating Companies	Material Mined and/or Treated 1976	Product Shipped		Shipments 1975 1976	
			(% Fe natural)	(% Fe dry/wet)	('000 tonnes)	('000 tonnes)
Steep Rock Iron Mines Ltd.; Steep Rock Lake, north of Atikokan, Ont.	Publicly-owned company	Hematite-goethite from open pit mine (49)	Concentrate 68/54) Pellets (63/62)	5 1 122	7 1 363	
Texada Mines Ltd., Texada Island, B.C.	Kaiser Aluminum and Chemical Corp.	Magnetite and chalcopyrite from open pit and underground mines (34)	Magnetite concen- trate (63/60)	312	388	
Wasbush Mines; Scully Mine includes mine and concentrator at Wabush, Labrador; Pointe Noire Division includes pel- letizing plant at Pointe Noire, Que.	The Steel Co. of Canada Ltd., 25.6%; Dominion Foundries and Steel, Ltd., 16.4%; Youngstown Sheet and Tube Company, Sheet and Tube Company, 15.6%; Inland Steel Co., 10.2%; Interlake, Inc., 10.2%; Wheeling-Pittsburgh Steel Corp., 10.2%; Finsider of Italy, 6.6%; and Pickands Mather & Co. (managing agent), 5.2%	Specular hematite and some magnetite from open pit mine (35)	Pellets (66/64) concentrate (66/64)	3 258 18	5 487 —	
Westrob Mines Limited; Tasu Harbour, Moresby Is., Queen Charlotte Is., B.C.	Falconbridge Nickel Mines Limited	Magnetite and chalcopyrite from open pit (38) and underground (44) mines,	Pellet-feed con- centrate (69)	610	564	
Byproduct Producers	The International Nickel Co. of Canada, Ltd.; Copper Cliff, Ont.	Publicly-owned company	Sinter-feed con- centrate (60)	411	344	
			Pyrrohite flotation concentrates (57) treated	517	485	

Quebec Iron and Titanium Corp.; mine at Lac Tio, Que.; electric smelter at Sorel, Quebec	Ilmenite-hematite ore (40% Fe, 35% TiO <sub>2</sub> ) from open pit mine at Lac Tio, beneficiated and calcined at Sorel	Ilmenite calcine electric smelted to TiO <sub>2</sub> slag and various grades of desulphurized pig iron or remelt iron
--	---	--

Sources: Company reports, personal communication.

1 Includes 150 014 tonnes of regular sinter, 1 710 979 tonnes of superfluxed sinter, 4 303 tonnes of crude are shipped as food supplement to livestock industry.

2 Includes 115 061 tonnes of oxide pellets consumed in the SL-RN direct reduction kiln.

3 Average grade of shipments from Quebec Cartier mining and Sidbec-Normines.

4 Includes shipments of Sidbec-Normines.

5 Pig iron - Nil.

TABLE 13  
CRUDE IRON ORE MINED IN CANADA, BY VARIETY AND GRADE, 1976

	Hematite		Magnetite		Siderite	
	Tonnes	% Fe Nat.	Tonnes	% Fe Nat.	Tonnes	% Fe Nat.
Newfoundland						
Iron Ore Company of Canada	42 144 000	39.30	—	—	—	—
Carol Division	17 678 190	35.08	—	—	—	—
Wabush Mines						
Labrador — Quebec						
Iron Ore Company of Canada	4 097 741	54.39 <sup>1</sup>	—	—	—	—
Schefferville — Direct-shipping	4 915 069	52.80 <sup>1,2</sup>	—	—	—	—
— Treat ore						
Quebec						
Hilton Mine, The	—	—	2 600 089	17.0	—	—
Quebec Cartier Mining Company	—	—	—	—	—	—
Gagnon and Fire Lake	13 875 137	36.10	—	—	—	—
Mount Wright	20 952 919	32.50	—	—	—	—
Ontario						
Adams Mine	—	—	4 656 169	19.38	—	—
Algoma Ore Division	—	—	—	—	2 773 635	32.2
Caland Ore Co.	2 090 710	53.68	—	—	—	—
Griffith Mine, The	—	—	5 690 259	23.24	—	—
Marmaraton Mining Co.	—	—	897 926	40.99	—	—
Moose Mountain Mine	—	—	1 648 169	32.98	—	—
(National Steel)	—	—	4 415 462	20.55	—	—
Sherman Mine	2 217 657	54.60	—	—	—	—
Steep Rock Iron Mines						
British Columbia	—	—	818 728	34.43	—	—
Texada Mines Ltd.	—	—	1 572 524	38.00	—	—
Wesfrob Mines Limited						
Total	107 971 423	38.66	22 299 336	24.06	2 773 635	32.2

Source: Data supplied to Mineral Development Sector by companies.

<sup>1</sup> Analysis of shipments.

<sup>2</sup> Treat ore for Sept-Iles Division concentrator and pelletizing operations. — Nil.

TABLE 14  
CANADA, CRUDE IRON ORE MINED, BY MINING METHOD, 1976

	Open Pit		Underground		Tonnes	% Fe Nat.	Tonnes	% Fe Nat.	Tonnes	% Fe Nat.
	Tonnes	% Fe Nat.	Tonnes	% Fe Nat.						
Newfoundland										
Iron Ore Company of Canada	42 144 000	39.3	—	—	—	42 144 000	—	39.3	—	39.3
Carol Division	17 678 190	35.08	—	—	—	17 678 190	—	35.08	—	35.08
Wabush Mines										
Labrador — Quebec										
Iron Ore Company of Canada	4 097 741	54.27 <sup>1</sup>	—	—	—	4 097 741	—	54.27	—	54.27
Schefferville — Direct shipping	4 915 069	52.8 <sup>1,2</sup>	—	—	—	4 915 069	—	52.8	—	52.8
— Treat ore										
Quebec										
Hilton Mine, The	2 600 099	17.0	—	—	—	2 600 099	—	17.0	—	17.0
Quebec Cartier Mining Company	13 875 137	36.10	—	—	—	13 875 137	—	36.10	—	36.10
Gagnon and Fire Lake	20 952 919	32.5	—	—	—	20 952 919	—	32.5	—	32.5
Mount Wright										
Ontario										
Adams Mine	4 656 169	19.38	—	—	—	4 656 169	—	19.38	—	19.38
Algoma Ore Division	—	—	2 773 635	—	32.20	2 773 635	—	32.20	—	32.20
Caland Ore Co.	2 090 710	53.68	—	—	—	—	—	—	2 090 710	—
Griffith Mine, The	5 690 259	23.24	—	—	—	—	—	—	5 690 259	—
Marmoraton Mining Co.	897 926	40.99	—	—	—	—	—	—	897 926	—
Moose Mountain Mine	1 648 169	32.98	—	—	—	—	—	—	1 648 169	—
(National Steel)										
Sherman Mine	4 415 462	20.55	—	—	—	4 415 462	—	20.55	—	20.55
Steep Rock Iron Mines	2 217 657	54.6	—	—	—	2 217 657	—	54.6	—	54.6
British Columbia										
Texada Mines Ltd.	70 985	28.00	747 743	35.04	818 728	—	34.43	—	34.43	—
Westfrob Mines Limited	1 519 507	37.79	53 017	43.96	1 572 524	—	38.00	—	38.00	—
Total	129 469 999	36.16	3 574 396	32.97	133 044 394	—	36.07	—	36.07	—

Source: Data Supplied to Mineral Development Sector.

<sup>1</sup>Analysis of shipments.

<sup>2</sup>Treat ore for Sept-Iles Division concentrator and pellet plant. — Nil.

TABLE 15  
DISPOSITION OF CRUDE IRON MINED IN CANADA, 1976

	For Direct Shipping Tonnes	% Fe Nat.	To concentration Plant Tonnes	% Fe Nat.	To Concentration and Agglomeration Plant		Total Tonnes	% Fe Nat.
					Tonnes	% Fe Nat.		
<b>Newfoundland</b>								
Iron Ore Company of Canada	—	—	—	—	42 144 000	39.3	42 144 000	39.3
Carol Division	—	—	—	—	17 678 190	35.08	17 678 190	35.08
Wabush Mines	—	—	—	—	—	—	—	—
<b>Labrador — Quebec</b>								
Iron Ore Company of Canada	4 097 741	54.27	—	—	4 915 069	—	—	—
Schefferville Division	—	—	—	—	—	—	4 097 741	54.27
Sept-Îles Division	—	—	—	—	—	—	4 915 069	52.8
<b>Quebec</b>								
Hilton Mine, The	—	—	—	—	2 600 099	17.0	2 600 099	17.0
Quebec Cartier Mining Company	—	—	13 875 137	36.1	—	—	13 875 137	36.1
Gagnon and Fire Lake	—	—	20 952 919	32.5	—	—	20 952 919	32.5
Mount Wright	—	—	—	—	—	—	—	—
<b>Ontario</b>								
Adams Mine	—	—	—	—	4 656 169	19.38	4 656 169	19.38
Algoma Ore Division	4 303	33.4	—	—	2 769 332	32.2	2 773 635	32.2
Caland Ore Co.	—	—	—	—	2 090 710	53.68	2 090 710	53.68
Griffith Mine, The	—	—	—	—	5 690 259	23.24	5 690 259	23.24
Marmaraton Mining Co.	—	—	—	—	897 926	40.99	897 926	40.99
Moose Mountain Mine	—	—	—	—	1 648 169	32.98	1 648 169	32.98
(National Steel)	—	—	—	—	—	—	—	—
Sherman Mine	—	—	—	—	4 415 462	20.55	4 415 462	20.55
Steep Rock Iron Mines	—	—	979 847	48.48	1 237 810	59.5	2 217 657	54.63
<b>British Columbia</b>								
Texada Mines Ltd.	—	—	818 728	34.43	—	—	818 728	34.43
Westfrob Mines Limited	—	—	1 572 524	38.00	—	—	1 572 524	38.00
<b>Total</b>	4 102 044	54.25	38 199 155	34.49	90 743 195	35.92	133 044 394	36.07

Source: Data supplied to Mineral Development Sector by companies.

1 Analysis of shipments. 2 Treat ore for Sept-Iles Division concentrator and pellet plant. — Ni

TABLE 16  
USABLE IRON ORE PRODUCED IN CANADA, BY TYPE OF PRODUCT, 1976

	Direct Shipping		Concentrates		Agglomerates		Total	
	Tonnes	% Fe Nat.	Tonnes		% Fe Nat.		Tonnes	% Fe Nat.
			% Fe Nat.	% Fe Nat.	% Fe Nat.	% Fe Nat.		
Newfoundland								
Iron Ore Company of Canada								
Carol Division	—	—	7 396 926	62.6 <sup>1</sup>	10 357 213	66.0 <sup>2</sup>	17 754 139	64.00
Wabush Mines	—	—	—	—	5 920 900	63.83	5 820 900	63.83
Labrador - Quebec								
Iron Ore Company of Canada	4 097 741	54.27	—	—	—	—	4 097 741	54.27 <sup>3</sup>
Scheterville Division	—	—	—	—	3 745 788	63.1	3 745 788	63.10
Quebec								
Hilton Mine, The	—	—	1 823	65.0	598 407	65.80	600 230	65.80
Orbec Cartier Mining	—	—	6 720 134	63.6	—	—	6 720 134	63.60
Gagnon and Fire Lake	—	—	7 960 728	63.6	—	—	7 960 728	63.60
Mount Wright	—	—	—	—	—	—	—	—
Ontario								
Adams Mine	4 303	33.4	—	—	1 195 952	65.06	1 195 952	65.06
Algoma Ore Division	—	—	1 994 470	55.8	1 752 247	47.8	1 756 550	47.8
Carland Ore Co.	—	—	—	—	—	—	1 994 470	55.8
Griffith Mine, The	—	—	—	—	1 571 331	66.18	1 571 331	66.18
Marmaraton Mining Co.	—	—	—	—	481 185	65.70	481 185	65.70
Moose Mountain Mine	—	—	—	—	665 511	63.34	665 511	63.34
(National Steel)	—	—	—	—	—	—	—	—
Sherman Mine	—	—	—	—	1 091 588	65.27	1 091 588 <sup>4</sup>	65.27
Sheep Rock Iron Mines	—	—	49 3175	58.5	1 357 306	62.5	1 406 623	62.35
British Columbia								
Texada Wines Ltd.	—	—	406 752	59.98	—	—	406 752	59.98
Westrob Mines Limited	—	—	800 199	66.12	—	—	800 199	66.12
Total Iron Ore								
Byproduct Iron Ore	4 102 044	54.25	25 330 349	62.71	28 637 428	63.48	58 069 121	62.49
Inco (Copper Cliff, Ont.)	—	—	—	—	484 884	65.70	484 884	65.70
Total Usable Iron								
Ore Produced	4 102 044	54.25	25 330 349	62.71	29 122 312	63.52	58 554 705	62.52

Source: Data supplied to Mineral Development Sector by companies.

118 412 001 tonnes of concentrates were produced from 42 143 594 tonnes of ore sent to concentrator; 10 357 213 tonnes of pellets were produced from the concentrates and 7 389 926 were left for shipments to Sept-Iles. 2Dry analysis. 3Analysis of shipments. 4Stockpiled. — Nil

TABLE 17  
WASTE/ORE CONCENTRATION RATIOS AT CANADIAN IRON ORE MINES, 1976

	Open pit Waste	Underground Waste	Iron Ore Mined	Usable Iron Ore Produced	Waste/Ore Ratio	Waste/Usable Ore Ratio	Concentration Ratio Fe Recovery
(tonnes)							
Newfoundland							
Iron Ore Company of Canada							
Carol Division	14 088 281	—	42 144 000	17 754 1392	0.334	0.793	2.374
Wabush Mines	8 083 965	—	17 678 190	5 820 900	0.457	1.389	3.037
0.599							
Labrador — Quebec							
Iron Ore Company of Canada							
Schefferville	17 719 1831	—	4 097 7413	4 097 741	1.966	2.259	1.000
4 915 0694			3 745 788			1.312	0.911
0.911							
Quebec							
Hilton Mine, The	405 180	—	2 600 099	600 230	0.156	0.675	4.33
Quebec Cartier Mining Company							
Gagnon and Fire Lake	2 068 6721	—	13 875 137	6 720 134	0.149	0.308	2.065
Mount Wright	8 577 4681	—	20 952 919	7 960 728	0.409	1.077	2.632
0.743							
Ontario							
Adams Mine	1 899 735	—	4 656 169	1 195 952	0.408	1.588	3.893
Algoma Ore Division		221 287	2 773 635	1 756 550	0.080	0.126	1.579
Caland Ore Co.	7 466 059	—	2 090 710	1 994 470	3.571	3.743	1.048
Griffith Mine, The	7 548 361	—	5 690 259	5 571 331	1.326	4.804	3.621
Marmaraton Mining Co.	2 704 653	—	897 926	481 185	3.012	5.621	1.866
Moose Mountain Mine	905 823	—	1 648 169	665 511	0.549	1.361	2.476
(National Steel)	4 112 2925	—	4 415 462	1 091 588	0.931	3.767	4.045
Sherman Mine	10 675 3805	—	2 217 657	1 722 111 <sup>e</sup>	4.814	6.20	1.29 <sup>e</sup>
0.775							
Steep Rock Iron Mines <sup>6</sup>							
British Columbia	39 989	1 036	818 728	406 752	0.050	0.098	2.013
Texada Mines Ltd.	687 861	109 774	1 572 524	800 199	0.507	0.997	1.965
0.886							

Source: Data supplied to Mineral Development Sector by companies.

<sup>1</sup>Calculated from data supplied by companies in cubic metres by using a factor of 2.658 tonnes equals 1 cubic metre.

<sup>2</sup>Pellets and concentrate.

<sup>3</sup>Schefferville direct-shipping ore.

<sup>4</sup>Schefferville treat ore.

<sup>5</sup>A factor of 2.259 tonnes of ore per cubic metre was used.

<sup>6</sup>Not all ore mined was consumed; 158 121 tonnes grading 48.48% Fe was stockpiled. Some

251 176 tonnes grading 59.5% Fe were purchased from Caland and fed to the pellet plant. <sup>e</sup>Estimated; — Nil.

TABLE 18  
USABLE IRON ORE SHIPPED BY CANADIAN PRODUCERS, BY TYPE OF PRODUCT, 1976

	Direct shipping		Concentrates		Agglomerates		Total	
	Tonnes	% Fe Nat.	Tonnes	% Fe Nat.	Tonnes	% Fe Nat.	Tonnes	% Fe Nat.
Newfoundland								
Iron Ore Company of Canada	—	—	7 300 897	62.80	10 084 804	64.25	17 385 701	63.64
Carroll Division	—	—	—	—	5 486 288	63.82	5 486 288	63.82
Labrador — Quebec								
Iron Ore Company of Canada	4 124 866	54.27	—	—	—	—	4 124 866	54.27
Knob Lake Division	—	—	—	—	—	—	3 524 949	63.16
Saint-Iles Division	—	—	—	—	—	—	—	—
Quebec								
Hilton Mine, The	—	—	—	—	657 661	65.52	657 661	65.52
Quebec Carter Mining Company	—	—	14 137 813	63.58	—	—	14 137 813	63.58
Gagnon, Fire Lake, Mount Wright	—	—	—	—	—	—	—	—
Ontario								
Adams Mine	4 303 <sup>1</sup>	33.4	—	—	1 196 620	65.06	1 196 620	65.06
Algoma Ore Division	—	—	728 087	55.80	1 860 218	47.80	1 865 297	47.80
Caland Ore Co.	—	—	—	—	859 218	63.02	1 587 305	59.71
Griffith Mine, The	—	—	—	—	1 464 596	66.18	1 464 596 <sup>2</sup>	66.18
Marmaraton Mining Co.	—	—	—	—	462 659	66.70	462 659 <sup>3</sup>	66.70
Moose Mountain Mine	—	—	—	—	626 938	62.40	626 938	62.40
(National Steel)	—	—	—	—	—	—	—	—
Sherman Mine	—	—	—	—	1 092 910	65.27	1 092 9104	65.27
Steep Rock Iron Mines	—	—	—	—	1 369 598	62.6	1 369 598	62.6
British Columbia								
Texada Mines Ltd. (sinter feed)	—	—	387 805	59.98	—	—	387 805	59.98
Wesfrob Mines Ltd. (pellet feed)	—	—	344 914	60.48	—	—	344 914	60.48
Byproduct Iron Ore								
Inco (Copper Cliff, Ont.)	—	—	563 633	69.37	—	—	563 633	69.37
Total Usable Iron Ore Shipped	4 129 169	54.25	23 463 149	63.13	29 232 119	63.08	56 824 437	61.93

Source: Data supplied to Mineral Development Sector by companies.

<sup>1</sup>Shipped to USA to be used as a food supplement to the livestock industry. <sup>2</sup>Excludes 115 061 tonnes shipped to the SL-RN kiln at the Griffith Mine for sponge iron production. <sup>3</sup>Includes 4 485 tonnes of fines. <sup>4</sup>Includes 20 271 tonnes of mill scale grading 70.00 per cent Fe. <sup>5</sup>Includes 7 043 tonnes of direct-shipping. <sup>6</sup>Percent Fe dry. — Nil.

TABLE 19  
USABLE IRON ORE SHIPPED BY CANADIAN PRODUCERS, BY DESTINATION, 1976

Iron Ore Producers	Canada		United States		British Rail	U.S.C. (tonnes)	Japan	Other 1,441
	Min. Rail	Orl. v.	Great Olive	Ports				
<b>Newfoundland</b>								
Iron Ore Co. of Canada					866 804	1 153 234	3 648 147	1 652 717
Carol Div. (pellets)	363 564	3 026 661	3 808 906	—	280 815	149 867	1 909 721	10 084 884
Waboush Mines (pellets)	2 568 716	2 538 663	—	—	378 909	—	—	5 496 288
<b>Labrador — Quebec</b>								
Iron Ore Co. of Canada	1 560 179	1 072 636	—	336 307	796 814	368 780	—	4 124 866
Schefferville iron- bearing spring ore	—	207 071	3 377 878	—	—	—	—	3 564 949
Sept. fire pellets	—	—	—	—	—	—	—	—
<b>Quebec</b>								
H. iron Mines, fire pellets	363 733	—	—	292 972	—	—	—	656 785
concentrate	—	4 886 170	1 342 188	886	2 190 597	5 059 539	—	896
Quibec Carter Mining Co.	—	—	—	—	—	—	619 789	14 138 293
Gagnon, Fire Lake, Mount Wright	—	—	—	—	—	—	—	—
<b>Ontario</b>								
Adam Mine (pellets)	1 196 620	—	—	—	—	—	—	1 196 620
Algoma Ore Division	1 774 561	86 065	—	4 670	—	—	—	1 865 295
Ca and O Co. direct ship ping	—	—	—	—	—	—	—	—
concentrates	—	728 087	—	—	—	—	—	728 087
pellets	—	859 218	—	—	—	—	—	859 218
Griffith Mine, The (pellets)	1 464 5963	115 0614	—	—	—	—	—	1 579 657
Warrior Mountain Co. (pellets)	—	458 174	—	4 4855	—	—	—	462 659
Moose Mountain Mine, National Steel (pellets)	—	618 399	—	—	—	—	—	618 399
Sherritt Mine (pellets)	1 092 910	—	—	—	—	—	—	1 092 910
Silver Rock Iron Works (pellets)	—	1 068 398	161 726	—	—	—	—	1 170 155
concentrate	7 0436	—	—	—	—	—	—	7 043
Beth Colfert a Trova Mines Inc. (concentrate)	—	171 529	—	—	—	387 805	—	387 805
Waboush Mines Inc. (concentrate)	—	—	—	—	704 660	32 3588	906 547	—
<b>By-Product Iron Ore Producers</b>								
Inco, Concen. Ch. Orl. (pellets)	96 663	—	377 870	—	10 262	—	—	484 795
<b>Total Usable Iron Ore Shipped</b>								
5 896 186	4 338 876	18 593 075	6 395 269	313 286	3 654 613	7 983 826	5 249 259	4 214 580
1 Italy. 2>Mainly Austria and Spain. 3From mine by rail to Thunder Bay and by ship to Hamilton. 4Shipped to SLR at Griffith Mine for sponge iron product on. 5From mine by rail to Eastern Sea board and 213 644 St. Lawrence seaway. 7Holand. 8Astatia. 9139 920 Eastern Sea board and 213 644 St. Lawrence seaway. 10Holand. 11319 317, Spain 590 405. —Nil.								

Source: Data supplied to Mineral Development Sector by companies.

1 Italy. 2>Mainly Austria and Spain. 3From mine by rail to Thunder Bay and by ship to Hamilton. 4Shipped to SLR at Griffith Mine for sponge iron  
product on. 5From mine by rail to Eastern Sea board and 213 644 St. Lawrence seaway. 7Holand. 8Astatia. 9139 920 Eastern Sea board and 213 644 St. Lawrence seaway. 10Holand. 11319 317, Spain  
590 405. —Nil.

TABLE 20  
STOCKS OF USABLE IRON ORE AT MINES AND SHIPPING PORTS IN CANADA, 1975 and 1976

	December 31, 1975	December 31, 1976	Change in Stocks (Tonnes)
<b>Newfoundland</b>			
Iron Ore Co. of Canada			
At Sept-Îles			
Concentrates	116 292	129 632	+ 13 340
Pellets — Carol Lake	1 173 901	1,459 683	+ 285 782
— Sept-Îles	517 355	678 194	+ 160 839
At Labrador City			
Concentrates	210 583 <sup>2</sup>	216 185	+ 5 602
Pellets	98 742	86 077	- 12 665
Wabush Mines	314 758	649 370	+ 334 612
<b>Labrador — Quebec</b>			
Iron Ore Co. of Canada			
Schefferville (at Sept-Îles)			
Direct-shipping	5 651 615	5 602 111	- 49 504
Plant feed	3 880 481	3 273 509	- 606 972
Quebec			
Hilton Mines, The	110 950	52 450	- 58 500
Quebec Cartier Mining Co.			
Gagnon, Fire Lake and Mount Wright	671 607 <sup>2</sup>	1 521 022	+ 849 415
Ontario			
Adams Mine	168 523	148 983	- 19 540
Algoma Ore Division	148 774	40 027	- 108 747
Caland Ore Co. Ltd.	663 260	952 643	+ 289 383
Griffith Mine, The <sup>1</sup>	23 093	14 767	- 8 326
Marmoraton Mining Co.	158 300	176 825	+ 18 525
Moose Mountain Mine (National Steel)	31 209	45 722	+ 14 513
Sherman Mine	-	-	-
Steep Rock Iron Mines Ltd. <sup>3</sup>	348 428	584 473	+ 236 045
<b>Total</b>	<b>14 590 468</b>	<b>15 840 887</b>	<b>+ 1 250 419</b>

<sup>1</sup>Excluding stocks at Thunder Bay. <sup>2</sup>Adjusted. <sup>3</sup>Does not include pyritic crude ore. — Nil.

TABLE 21  
ANALYSIS OF CANADIAN IRON ORE SHIPMENTS IN 1976



TABLE 21 (cont'd)

	Shipments (wet tonnes)	Dry Analysis						Loss by Ignition	Moisture	Size Range
		Natural Fe	Fe	P	SiO <sub>2</sub>	Mn	Al <sub>2</sub> O <sub>3</sub>	CaO	MgO	
<b>Marmoraton Mining Co.</b>										
Pellets	458 174	—	65.7	0.006	3.42	0.086	0.59	0.81	0.94	0.007
Fines	4 485	—	—	—	—	—	—	—	—	—
<b>National Steel Corporation of Canada, Limited</b>										
Pellets	626 939	62.4	63.3	0.01	8.30	0.015	0.45	—	0.015	—
Chips	—	—	—	—	—	—	—	—	—	—
Total National Steel	626 939	62.4	63.3	0.01	8.30	0.015	0.45	—	0.015	—
<b>Sherman Mine</b>										
Pellets	1 092 910	65.27	65.82	0.02	5.47	0.07	0.46	0.23	0.32	0.002
<b>Steep Rock Iron Mines Ltd.</b>										
Pellets	1 369 598	—	62.6	0.016	7.50	0.28	1.70	0.35	0.24	0.01
SR Fines	—	—	—	—	—	—	—	—	—	—
Total Steep Rock	1 369 598	—	62.6	0.016	7.50	0.28	1.70	0.35	0.24	0.01
<b>British Columbia</b>										
<b>Texada Mines Ltd.</b>										
Magnetite concentrate <sup>4</sup> (sinter feed)	387 805	59.98	63.46	0.01	5.96	0.15	0.83	3.07	0.54	1.03
<b>Wesfrob Mines Ltd.</b>										
Sinter Feed	344 914	—	60.48	0.02	5.84	—	1.99	—	—	1.06
Pellets Feed	563 633	—	69.37	0.01	1.55	—	0.49	—	—	0.28
Total Wesfrob	908 547	—	65.99	0.01	3.18	—	1.06	—	—	0.58
<b>Byproduct Ore</b>										
<b>The International Nickel Company of Canada Ltd.</b>										
3Fe metallic.	484 884	65.7	66.8	0.004	2.32	0.025	0.65	0.46	0.29	0.007
2Fe total.	—	—	—	—	—	—	—	—	—	1.77

<sup>1</sup> Gain on ignition.<sup>2</sup> Fe total.<sup>3</sup> Fe metallic.<sup>4</sup> Also contains 0.084% Cu (dry). — Ni.

TABLE 22  
CANADIAN CONSUMPTION OF IRON-BEARING MATERIALS AT INTEGRATED<sup>1</sup> IRON AND STEEL PLANTS, 1976

	In Sinter Plants	In Direct Reduction Plants	In the Production of Pig Iron			Total in Furnaces
			In Iron and Steel Furnaces	In Steel Furnaces	In Steel	
(Tonnes)						
Iron Ore						
Crude and concentrates	243 241	—	349 726	23 250	372 976	
Pellets	114 641	270 758	10 793 034	66 298	10 859 332	
Sinter	93 645	—	1 745 457	—	1 745 457	
Sinter produced at Steel plant	—	—	326 498	—	326 498	
Direct-reduced iron	—	—	31 149	164 050	195 199	
Other iron-bearing materials						
Flue dust	122 556	—	—	—	—	
Mill Scale, cinder, slag	478 160	—	474 988	496	475 484	

Source: Company data supplied to Mineral Development Sector.

<sup>1</sup>Dominion Foundries and Steel, Limited (Hamilton); Sidbec-Dosco Limited (Contrecoeur); Sydney Steel Corporation (Sydney); The Algoma Steel Corporation, Limited (Sault Ste Marie); and The Steel Company of Canada, Limited (Hamilton), — Nil







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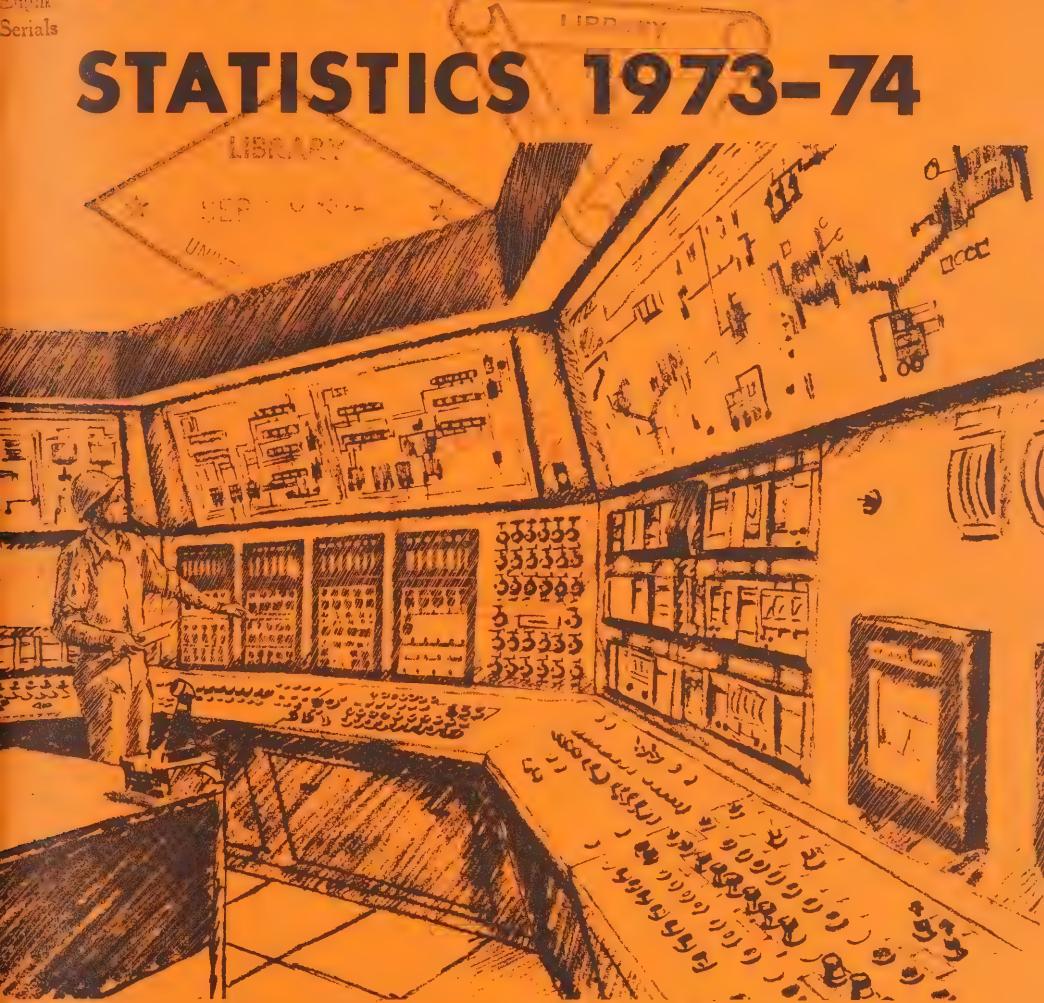
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# CANADIAN

# IRON ORE INDUSTRY

# STATISTICS 1973-74



## Roger J. Goodman and Richard Johnsons



## Energy, Mines and Resources Canada

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MINERAL BULLETIN MR 144

**Canadian  
Iron Ore Industry  
Statistics, 1973-74**

**Roger J. Goodman**

**and**

**Richard Johnson**



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## PREFACE

The bulletin was prepared to continue the Canadian iron ore industry Statistics series that was developed for the Mineral Information Bulletin published from 1955 through 1970. The statistical data, when used in conjunction with the Iron Ore chapter of the Canadian Minerals Yearbook, present a comprehensive review of the iron ore industry for the respective years 1973-74.

The data used in the compilation of the statistical tables were supplied to Mineral Development Sector by individual firms within the Canadian iron ore industry. Their cooperation and prompt responses to our requests are greatly appreciated.

May 1975



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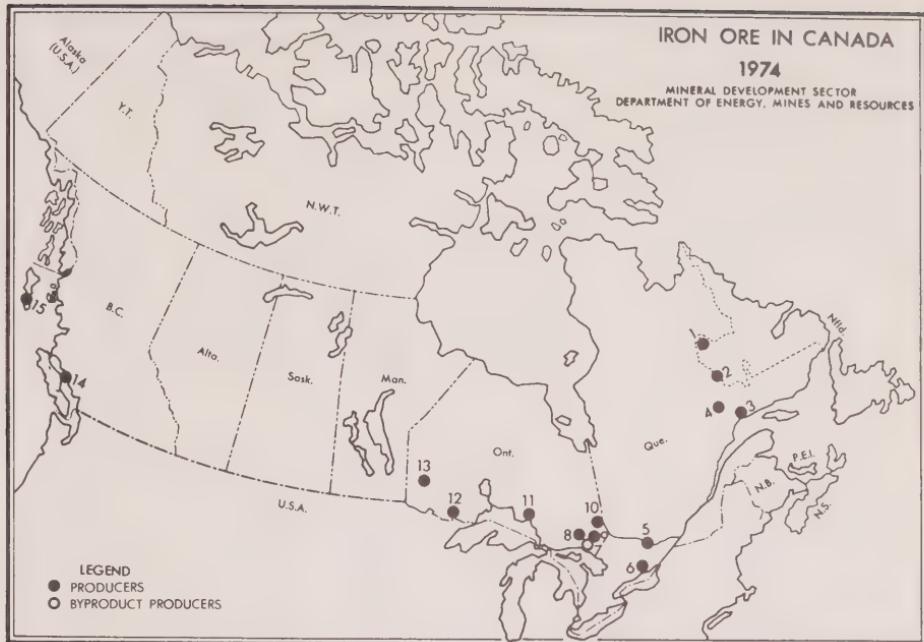
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1973 STATISTICAL REVIEW,  
BY COMPANY





#### PRODUCERS

(numbers refer to numbers on map)

1. Iron Ore Company of Canada, Knob Lake Division (Schefferville)
2. Iron Ore Company of Canada, Carol Division, (Labrador City)
2. Scully Mine of Wabush Mines (Wabush)
3. Iron Ore Company of Canada, Sept-Îles Division (Sept-Îles)
3. Pointe Noire Division of Wabush Mines (Pointe Noire)
4. Quebec Cartier Mining Company (Gagnon)
5. Hilton Mines, Ltd. (Shawville)
6. Marmoraton Mining Company, Division of Bethlehem Chile Iron Mines Company (Marmora)
8. National Steel Corporation of Canada, Limited (Capreol)
9. Sherman Mine of Dominion Foundries and Steel, Limited (Temagami)

10. Adams Mine of Dominion Foundries and Steel, Limited (Kirkland Lake)
11. Algoma Ore Division of The Algoma Steel Corporation, Limited (Wawa)
12. Caland Ore Company Limited (Atikokan). Steep Rock Iron Mines Limited (Atikokan)
13. The Griffith Mine (Bruce Lake)
14. Texada Mines Ltd. (Texada Is.)
15. Wesfrob Mines Limited (Moresby Is.)

#### BYPRODUCT PRODUCERS

7. The International Nickel Company of Canada, Limited (Copper Cliff)

Figure 1

TABLE 1  
CANADA, IRON ORE PRODUCERS, 1972 AND 1973

Company and Property Location	Participating Companies	Material Mined and/or Treated	Product Shipped	Shipments 1972	Shipments 1973
		(% Fe natural)	(% Fe dry/wet)	('000 wet long tons)	
Adams Mine: Boston Twp., near Kirkland Lake, Ont.	Dominion Foundries and Steel, Ltd.; managed by Cliffs of Canada Limited, a wholly-owned subsidiary of The Cleveland-Cliffs Iron Company	Magnetite from open-pit mine (19)	Pellets (66/65)	1,093	1,174
Algoma Ore Division of The Algoma Steel Corp., Ltd.; mines and sinter plant near Wawa, Ont.	Wholly-owned	Siderite from open-pit and underground mine (34)	Siderite sinter (48/48)	1,797	2,046 <sup>1</sup>
Caland Ore Co., Ltd.; east arm of Steep Rock Lake, near Atikokan, Ont.	Inland Steel Co.	Hematite and goethite from open-pit mine (55)	Pellets (69/64) Concentrate (59/56) Direct Shipping (60/55)	1,115 783 -	1,178 928 86
Griffith Mine, The; Bruce Lake, 35 miles south of Red Lake, Ont.	The Steel Co. of Canada, Ltd.; managed by Pickands Mather & Co.	Magnetite from open-pit mine (24)	Pellets (67/67)	1,380	1,506
Hilton Mines, Ltd.; near Shawville, Quebec 40 miles NW of Ottawa	The Steel Co. of Canada Ltd., 50%; Jones & Laughlin Steel Corp., 25%; Pickands Mather & Co. (managing agent), 25%	Magnetite from open-pit mine (20)	Pellets (67/67)	878	870

Iron Ore Company of Canada	Labrador Mining and Exploration Company Ltd., 4.73%; Hollinger Mines Ltd., 10.17%; The Hanna Mining Co. (managing agent), 26.37%;	Hematite-goethite-limonite from open-pit mines (54)	Direct-shipping ore (59/54)	5,046	7,211
1. Schefferville, Quebec-Labrador operation	Bethlehem Steel Corp. 18.80%; Armco Steel Corp., 5.87%; Lykes-Youngstown Corp. 5.87%;	Specular hematite and magnetite from open-pit mines (39)	Pellets (65/64) Concentrates (65/63)	7,985 578	9,721 3,060
2. Carol Lake, Labrador operation	National Steel Corp., 17.62%; Republic Steel Corp., 5.87%; Wheeling-Pittsburgh Steel Corp., 4.70%;	Hematite-goethite-limonite from open-pit mines, Schefferville area	Pellets (63/61) Concentrate (61/59)	— —	372 22
3. Sept-Îles, Que., Pellet operation	Marmoraton Mining Co., Division of Bethlehem Chile Iron Mines Company, near Marmoraton, Ont.	Bethlehem Steel Corp. Magnetite from open-pit mine (36)	Pellets (65/65)	490	481
National Steel Corporation of Canada, Ltd., Moose Mountain Mine, Sudbury area, 20 miles north of Capreol, Ont.	National Steel Corp. of Canada, Limited (The Hanna Mining Co. is the managing agent)	Magnetite from open-pit mine (33)	Pellets (64/63)	641	725
Quebec Carter Mining Company, Gagnon, Quebec	United States Steel Corp.	Specular hematite from open-pit mine (34)	Specular hematite concentrate (66/64)	7,432 8,805	8,805

Table 1 (cont'd)

Company and Property Location	Participating Companies	Material Mined and/or Treated Product Shipped	Shipments 1972	Shipments 1973
Sherman Mine; near Temagami, Ont.	Dominion Foundries and Steel, Limited, 90%; Tetapaga Mining Company (wholly-owned subsidiary of The Cleveland-Cliffs Iron Company), 10%. The operation and management of the mine is by Cliffs of Canada Limited, also a wholly-owned subsidiary of The Cleveland-Cliffs Iron Company	Magnetite-from open-pit mines (21)e	Pellets (66/65)	1,052 ('000 wet long tons)
Steep Rock Iron Mines Ltd.; Steep Rock Lake, N. of Atlikokan, Ont.	Publicly-owned company	Hematite-goethite from open-pit mine (51)	Pellets (63/63)	1,467 9
Texada Mines Ltd.; Texada Island, B.C.	Kaiser Aluminum and Chemical Corp.	Magnetite and chalcopyrite from underground mine (35)	Magnetite concentrate (64/61)	614 486
Wabush Mines; Scully Mine includes mine and concentrator at Wabush, Labrador; Pointe Noire	The Steel Co. of Canada, Ltd., 25.6%; Dominion Foundries and Steel, Ltd., 16.4%; Youngstown Sheet and Tube Company, 15.6%; Inland Steel Co., 10.2%; Interlake, Inc., 10.2%; Wheeling-Pittsburgh Steel Corp., 10.2%; Finsider of Italy, 6.6%; and Pickands Mather & Co., (managing agent), 5.2%.	Specular hematite and some magnetite from open-pit mine (35)	Pellets (66/64) Concentrate (66/64)	5,310 3 66 5,371

Wesfrob Mines Limited; Tasu Harbour, Moresby Is., Queen Charlotte Is., B. C.	Falconbridge Nickel Mines Limited	Magnetite and chalcopyrite from open-pit mines (37)	Pellet-feed con- centrate (70/63) Sinter-feed con- centrate (61/58)	330 284	496 461
<b>Byproduct Producers</b>					
Cominco Ltd.; Kimberley <sup>3</sup> B. C.	Publicly-owned company	Pyrrhotite flotation con- centrates roasted for acid production; calcine sintered	Iron oxide sinter (63/63) is processed into pig iron at plant	28 <sup>4</sup>	-
Falconbridge Nickel Mines <sup>3</sup> Ltd.; Falconbridge, Ont.	Publicly-owned company	Pyrrhotite flotation concentrates (57) treated	Iron oxide calcine (67/67)	19	-
The International Nickel Co. of Canada, Ltd.; Copper Cliff, Ont.	Publicly-owned company	Pyrrhotite flotation concentrates (57) treated	Pellets (68/68) <sup>e</sup>	700	624
Quebec Iron and Titanium Corp.; mine at Lac Tio, Que.; electric smelter at Sorel, Quebec	Kennebott Copper Corp.; Gulf & Western Industries, Inc. (The New Jersey Zinc Co.)	Ilmenite-hematite ore (40% Fe, 35% TiO <sub>2</sub> ) from open-pit mine at Lac Tio, beneficiated and calcined at Sorel	Ilmenite calcine electric smelted to TiO <sub>2</sub> slag and various grades of desulphurized pig iron or remelt iron	1,600 <sup>5</sup>	1,900 <sup>5</sup>

Sources: Company reports, personal communication.

<sup>1</sup> Includes 170,408 tons of regular sinter; 1,873,844 tons of superfluxed sinter; 1,409 tons of crude ore shipped as food supplement to livestock industry; <sup>2</sup> Commenced operations in 1973. <sup>3</sup> Ceased operations in 1972. <sup>4</sup> Sinter consumed in pig iron production. <sup>5</sup> Ilmenite calcine smelted.

<sup>e</sup> Estimated; - Nil.

TABLE 2  
CRUDE IRON ORE MINED IN CANADA, BY VARIETY AND GRADE 1973

	Hematite		Magnetite		Siderite	
	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.
<b>NEWFOUNDLAND</b>						
Iron Ore Company of Canada	29, 959, 500	38.7	—	—	—	—
Carol Division	17, 988, 752	35.03	—	—	—	—
Wabush Mines	—	—	—	—	—	—
<b>LABRADOR-QUEBEC</b>						
Iron Ore Company of Canada	8, 238, 941	54.21	—	—	—	—
Schefferville Division	3, 516, 538	49.42	—	—	—	—
"	—	—	—	—	—	—
<b>QUEBEC</b>						
Hilton Mines, Ltd.	—	—	3, 087, 210	19.50	—	—
Quebec Cartier Mining Company	19, 737, 307	34.2	—	—	—	—
<b>ONTARIO</b>						
Adams Mine	—	—	4, 585, 332	19.21	—	—
Algoma Ore Division	—	—	—	—	3, 249, 800	33.5
Caland Ore Co. Limited	2, 817, 340	54.82	—	—	—	—
Griffith Mine, The	—	—	5, 256, 497	24.04	—	—
Marmaraton Mining Co.	—	—	890, 067 <sup>1</sup>	35.88 <sup>2</sup>	—	—
Moose Mountain Mine	—	—	—	—	—	—
(National Steel)	—	—	1, 600, 745	33.41	—	—
Sherman Mine	—	—	4, 189, 262	21 <sup>e</sup>	—	—
Steep Rock Iron Mines Ltd.	1, 751, 896	51.03	—	—	—	—
<b>BRITISH COLUMBIA</b>						
Texada Mines Ltd.	—	—	977, 014	34.83	—	—
Wesfrob Mines Ltd.	—	—	1, 590, 518	36.73	—	—
Total	84, 010, 274	39.63	22, 178, 645	24.38	3, 249, 800	33.5

Source: Data supplied to Mineral Development Sector by companies.  
<sup>1</sup> Cobber product. <sup>2</sup> Grade of cobber product. - Nil; e Estimated.

TABLE 3  
CANADA, CRUDE IRON ORE MINED IN CANADA, BY MINING METHOD, 1973

	Open Pit		Underground		Total	
	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.		
<b>NEWFOUNDLAND</b>						
Iron Ore Co. of Canada	29,959,500	38.7	—	—	29,959,500	38.7
Carol Division	35.03		—	—	17,988,752	35.03
Wabush Mines	17,988,752		—	—	17,988,752	35.03
<b>LABRADOR-QUEBEC</b>						
Iron Ore Co. of Canada	8,238,941	54.21 <sup>1</sup>	—	—	8,238,941	54.21
Schefferville Division	3,516,538	49.51 <sup>1,2</sup>	—	—	3,516,538	49.51 <sup>2</sup>
" "						
<b>QUEBEC</b>						
Hilton Mines, Ltd.	3,087,210	19.50	—	—	3,087,210	19.50
Quebec Cartier Mining Company	19,737,307	34.2	—	—	19,737,307	34.2
<b>ONTARIO</b>						
Adams Mine	4,585,332	19.21	—	—	4,585,332	19.21
Algoma Ore Division	—	3,249,800	33.5	—	3,249,800	33.5
Caland Ore Co. Limited	2,817,340	54.82	—	—	2,817,340	54.82
Griffith Mine, The	5,258,497	24.04	—	—	5,258,497	24.04
Marmoraton Mining Co.	890,067	35.88	—	—	890,067	35.88
Moose Mountain Mine (National Steel)	1,600,745	33.41	—	—	1,600,745	33.41
Sherman Mine	4,189,262	21 <sup>e</sup>	—	—	4,189,262	21 <sup>e</sup>
Steep Rock Iron Mines Ltd.	1,572,980	51.00	178,916	49.2	1,751,896	51.03
<b>BRITISH COLUMBIA</b>						
Texada Mines Ltd.	—	—	977,014	34.83	977,014	34.83
Westfrob Mines Ltd.	1,590,518	36.73	—	—	1,590,518	36.73
Total	105,032,989	36.43	4,405,730	34.43	109,438,719	36.35

Source: Data supplied to Mineral Development Sector  
<sup>1</sup> Analysis of shipments; <sup>2</sup> Treat ore for Septiles Division concentrator and pelletizing plant;  
— Nil; <sup>e</sup> Estimated.

TABLE 4  
DISPOSITION OF CRUDE IRON ORE MINED IN CANADA, 1973

	For Direct Shipping		To Concentration and Agglomeration Plant		To Concentration and Agglomeration Plant		Total
	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	
<b>NEWFOUNDLAND</b>							
Iron Ore Co. of Canada	-	-	-	-	29,959,500	38.7	29,959,500
Carol Division	-	-	-	-	17,988,752	35.03	17,988,752
Walrus Mines	-	-	-	-	-	-	35.03
<b>LABRADOR-QUEBEC</b>							
Iron Ore Co. of Canada	-	-	-	-	-	-	-
1. Schefferville Division	8,238,941	54.21	-	-	-	-	-
2. Sept-Iles Division	-	-	-	-	3,516,538	49.42	3,516,538
<b>QUEBEC</b>							
Hilton Mines, Ltd.	-	-	19,737,307	-	3,087,210	19.50	3,087,210
Quebec Cartier Mining Company	-	-	-	-	34.2	-	19,737,307
<b>ONTARIO</b>							
Adams Mine	-	-	-	-	4,585,332	19.21	4,585,332
Algoma Ore Division	1,409	34.9	-	-	3,248,391	33.5	3,249,800
Caland Ore Co. Limited	85,970 <sup>2</sup>	55.4	-	-	2,647,070	54.81	2,733,040
Griffith Mine, The	-	-	-	-	5,258,497	24.04	5,258,497
Marinoration Mining Co.	-	-	-	-	890,067	35.88	890,067
Nogee Mountain Mine	-	-	-	-	-	-	35.88
(National Steel)	-	-	-	-	1,600,745	33.41	1,600,745
Sherman Mine	-	-	-	-	4,189,262	21e	4,189,262
Steep Rock Iron Mines Ltd.	-	-	563,042	44.77	1,273,154	54.04	1,836,196
<b>BRITISH COLUMBIA</b>							
Texada Mines Ltd.	-	-	977,014	34.83	-	-	977,014
Westrob Mines Ltd.	-	-	1,590,518	36.73	-	-	1,590,518
Total							
Source: Data supplied to Mineral Development sector by companies.	8,326,320	54.23	22,867,881	34.67	78,244,518	34.92	109,438,719
<sup>1</sup> Treat ore mined at Schefferville; <sup>2</sup> Excluding an estimated 84,300 tons shipped to Steep Rock Iron Mines Ltd.; <sup>3</sup> Cobber product; <sup>e</sup> Estimated; - Nil.							36.35
<sup>4</sup> Grade of cobber product; <sup>5</sup> Crude ore fed directly to agglomerating plant. Includes an estimated 84,300 tons from Caland.							

TABLE 5  
USABLE IRON ORE PRODUCED IN CANADA, BY TYPE OF PRODUCT, 1973

IRON ORE PRODUCERS	Direct Shipping		Concentrates		Agglomerates		Total Long Tons	Total % Fe Nat.
	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.		
<b>NEWFOUNDLAND</b>								
Iron Ore Co. of Canada	-	-	3,174,927 <sup>1</sup>	62.88	9,036,310	64.98	12,211,237	64.43
Carol Division	-	-	-	-	5,150,810	64.14	5,150,810	64.14
Wabush Mines	-	-	-	-	-	-	-	-
<b>LABRADOR-QUEBEC</b>								
Iron Ore Co. of Canada	8,238,941	54.21 <sup>2</sup>	-	-	-	-	8,238,941	54.21
1. Schefferville Division	-	-	-	-	571,800	61.70	571,800	61.70
2. Sept-Îles Division	-	-	-	-	-	-	-	-
<b>QUEBEC</b>								
Hilton Mines, Ltd.	-	-	9,285,595	64.20	898,784	67.20	898,784	67.20
Quebec Cartier Mining Company	-	-	-	-	-	-	9,285,595	64.20
<b>ONTARIO</b>								
Adams Mine	-	-	-	-	1,150,330	65.13 <sup>4</sup>	1,150,330	65.13
Algoma Ore Division	1,409	34.9	-	-	2,030,781	48.4	2,032,780	48.39
Caland Ore Co.	85,370	55.40	1,292,125 <sup>5</sup>	56.85 <sup>6</sup>	1,114,993	63.28	2,493,088	59.68
Griffith Mine, The	-	-	-	-	1,172,038	66.58	1,572,038	66.58
Marmaraton Mining Co.	-	-	-	-	480,687	65.4	480,687	65.45
Moose Mountain Mine	-	-	-	-	724,906	62.34	724,906	62.34
(National Steel)	-	-	-	-	1,146,015	65.14	1,146,015	65.14
Sherman Mine	-	-	9,208	54.80	1,418,452	62.98	1,427,660	62.93
Steep Rock Iron Mines Ltd.	-	-	-	-	-	-	-	-
<b>BRITISH COLUMBIA</b>								
Texada Mines Ltd.	-	-	455,867	60.66	-	-	455,867	60.66
Westrob Mines Ltd.	-	-	964,014	60.60	-	-	964,014	60.60
Total Iron Ore	8,326,320	54.23	15,181,736 <sup>3</sup>	62.96	25,295,916	63.34	48,803,972	61.67
<b>BYPRODUCT IRON ORE PRODUCERS</b>								
International Nickel Company of Canada, Limited, The (Inco) (Copper Cliff, Ont.)	-	-	-	-	616,000	67.6 <sup>e</sup>	616,000	67.6 <sup>e</sup>
Total Usable Iron Ore Produced	8,326,320	54.23	15,181,736 <sup>3</sup>	62.96	25,911,916	63.44	49,419,972	61.74

Source: Data Supplied to Mineral Development Sector by companies.

<sup>1</sup> Difference between concentrate produced and concentrate sent to pellet plant; <sup>2</sup> Analysis of shipments from Sept-Îles; <sup>3</sup> Excludes production of filter cake for use in pellet plant by IOC; <sup>4</sup> Analysis of shipments; <sup>5</sup> Dry weight.

<sup>e</sup> Estimated; - Nil.

TABLE 6  
WASTE/ORE AND CONCENTRATION RATIOS AT CANADIAN IRON ORE MINES, 1973

	Open Pit Waste	Underground Waste	Iron Ore Mined (long tons)	Usable Iron Ore Produced	Waste/Ore Ratio	Waste/Usable Ore Ratio	Concentration Ratio	Fe Recovery
<b>NEWFOUNDLAND</b>								
Iron Ore Co. of Canada	11,143, 4,737,189	-	29,959,500 17,988,752	12,211,237 <sup>2</sup> 5,150,810	0.372 0.263	0.913 0.920	2.253 3.492	0.679 0.524
Carol Division								
Wabush Mines								
<b>LABRADOR-QUEBEC</b>								
Iron Ore Co. of Canada	21,547,312 <sup>1</sup>		8,238,941 <sup>3</sup> 3,516,538 <sub>3</sub>	8,238,941 <sup>1</sup> 1,476,600 <sup>2</sup>	{ 1.833	2.218	2.382	1.000 0.528
Schefferville								
Quebec Cartier Mining Company	3,644,509 3,170,000 <sup>1</sup>	-	3,087,210 19,737,306	898,784 9,073,093	0.118 0.161	0.406 0.349	3.435 2.175	0.996 0.883
<b>ONTARIO</b>								
Adams Mine	2,326,944	-	4,585,332	1,150,330	0.507	2.023	3.986	0.851
Algoa Ore Division	6,547	3,249,800	2,032,190	0.002	0.003	1,600	0.903	
Caland Ore Co.	5,459,752	-	2,817,340	2,493,088	1.938	2,190	1,181 <sup>5</sup>	0.898
Griffith Mine, The	6,529,219	-	5,258,497	1,572,038	1.242	4,153	3,345	0.828
Marmaraton Mining Co.	2,770,779	-	1,780,134 <sup>6</sup>	480,687	1.557	5,764	3,703	0.86 <sup>6</sup>
Moose Mountain Mine (National Steel)	592,600 <sup>1</sup>	-	1,600,745	724,906 <sup>4</sup>	0.370	0.817	2.208	0.845
Sherman Mine	3,372,334 <sup>1</sup>	-	4,189,242	1,146,015	0.805	2,943	3,656	0.849
Steep Rock Iron Mines Ltd.	6,540,653	-	1,836,196 <sup>7</sup>	1,427,660	3.562	4,581	1,286	0.89 <sup>e</sup>
<b>BRITISH COLUMBIA</b>								
Texada Mines Ltd.	-	696	977,014	455,867	0.001	0.002	2.143	0.813
Wesfrob Mines Ltd.	1,027,950 <sup>1</sup>	-	1,590,518	964,014	0.646	1.066	1,650	1.000

Source: Data supplied to Mineral Development Sector by companies.

<sup>1</sup> Calculated from data supplied by companies in cubic yards by using a factor of 2 long tons = 1 cubic yard. <sup>2</sup> Pellets and concentrate; <sup>3</sup> Schefferville "treat ore"; <sup>4</sup> Shipments; <sup>5</sup> for pellets; <sup>6</sup> Estimated tonnage of cobber product multiplied by a factor of 2; <sup>7</sup> including 84,300 tons from Caland. - Nil; <sup>e</sup> Estimated.

TABLE 7  
USABLE IRON ORE SHIPPED BY CANADIAN PRODUCERS,  
BY TYPE OF PRODUCT, 1973

IRON ORE PRODUCERS	Direct Shipping		Concentrates		Agglomerates		Total	
	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.
<b>NEWFOUNDLAND</b>								
Iron Ore Co. of Canada								
Carol Division	-	-	3,047,300	62.95	9,721,210	63.93	12,768,510	63.70
Wabush Mines	-	-	65,735	63.82	5,371,475	64.14	5,437,210	64.14
<b>LABRADOR-QUEBEC</b>								
Iron Ore Co. of Canada								
1. Knob Lake Division	7,211,889	54.21	-	-	-	-	7,211,889	54.21
2. Sept-Îles Division	-	-	-	-	372,490	61.54	372,490	61.54
QUEBEC								
Hilton Mines, Ltd.								
Quebec Cartier Mining Company	-	-	8,805,839	64.20	870,240 <sup>2</sup>	67.11	870,240	67.11
ONTARIO								
Adams Mine								
Algoma Ore Division	-	1,409	-	-	1,173,711	65.13	1,173,711	65.13
Caland Ore Co.	85,970	34.9	-	-	2,044,252	48.4	2,045,661	48.39
Griffith Mine, The	55,40	55.40	928,064	56.6	1,178,833	63.28	2,192,867	60.14
Marmaraton Mining Co.	-	-	-	-	1,506,617	65.58	1,506,617	65.58
Moose Mountain Mine	-	-	-	-	481,697	65.44	481,697	65.44
(National Steel)	-	-	-	-	724,906	65.4	724,906	65.4
Sherman Mine	-	-	9,208	48.99	1,034,509	65.14	1,034,509	65.14
Steep Rock Iron Mines Ltd.	-	-	-	-	1,417,162	63.03	1,426,370	62.94
BRITISH COLUMBIA								
Texada Mines Ltd.								
Westrobb Mines Ltd.	-	-	485,505	60.65	-	-	485,505	60.65
Total Iron Ore	7,299,2658	54.22	14,298,325	63.07	25,897,102	63.01	47,526,687	61.60
<u>BYPRODUCT IRON ORE PRODUCER</u>								
Inco (Copper Cliff, Ont.)	-	-	-	-	624,000	67.6 <sup>e</sup>	624,000	67.6 <sup>e</sup>
Total Usable Iron Ore Shipped	7,299,2658	54.22	14,298,325	63.07	26,521,102	63.12	48,118,695	61.72

Source: Data supplied to Mineral Development Sector by companies.

<sup>1</sup> Includes 19,873 tons of chips and grading 62.97% Fe.

<sup>2</sup> Includes 865 tons of chips and 538 tons of media ore.

<sup>3</sup> Run-of-mine upgraded slightly through process of crushing, screening and drying.

<sup>4</sup> Dry weight.

<sup>5</sup> Shipped to Steep Rock Iron Mines Ltd.

- Nil; <sup>e</sup> Estimated.

TABLE 8  
USABLE IRON ORE SHIPPED BY CANADIAN PRODUCERS BY DESTINATION 1973

Source: Data supplied to Mineral Development Sector by Companias

Includes 865 tons of pellet chips. 2. Source: Canadian Transport Commission; 3. Compares with 8,805,839 tons imported by QCN; 4. Includes 8,805,839 tons from Quebec Carlier Mining Co.

TABLE 9  
STOCKS OF USABLE IRON ORE AT MINES AND SHIPPING  
PORTS IN CANADA, 1972-73

(long tons)

	December 31, 1972	December 31, 1973	Change in Stocks
<b>NEWFOUNDLAND</b>			
Iron Ore Company of Canada			
At Sept-Iles			
Concentrates	21,894 <sup>1</sup>	81,390 <sup>1</sup>	+59,496
Pellets	188,447 <sup>1</sup>	429,401 <sup>2</sup>	+240,954
At Labrador City			
Concentrates	164,960	186,399	+21,439
Pellets	864,920	125,517	-739,403
Wabush Mines <sup>3</sup>	496,420	255,882	-240,538
Wabana Mines <sup>3</sup>	55,000	55,000	-
<b>LABRADOR-QUEBEC</b>			
Iron Ore Company of Canada			
Schefferville (at Sept-Iles)	2,383,508	2,866,391	+482,883
<b>QUEBEC</b>			
Hilton Mines, Ltd.	94,408	122,952 <sup>4</sup>	+28,544
Quebec Cartier Mining Company	618,580	888,012	+269,432
<b>ONTARIO</b>			
Adams Mine	88,992	151,929	+62,937
Algoma Ore Division	129,121	84,112	-45,009
Caland Ore Co. Ltd.	907,682	1,292,203	+384,521
Griffith Mine, The <sup>5</sup>	8,030	73,451	+65,421
Marmoraton Mining Co.	23,997	28,167	+4,170
Moose Mountain Mine (National Steel)	75,222	35,843	-39,379
Sherman Mine	5,801	2,705	-3,096
Steep Rock Iron Mines Ltd.	963,738	939,547	-24,191
<b>BRITISH COLUMBIA</b>			
Texada Mines Ltd.	25,615	28,018	+2,403
Wesfrob Mines Limited	114,337	121,677	+7,340
Total	7,230,672	7,768,596	+537,924

<sup>1</sup> From Carol operation.

<sup>2</sup> 230,091 tons from Carol Operation and 199,310 from Sept-Iles pellet plant.

<sup>3</sup> No ore shipped 1970-73.

<sup>4</sup> Stockpile as of December 31, 1972 plus the difference between production and shipments.

<sup>5</sup> Excluding stocks at Thunder Bay.

TABLE 10  
ANALYSES OF CANADIAN IRON ORE SHIPMENTS IN 1973

	Shipments (Long wet tons)	Dry Analysis						Loss by Ignition	Moisture	Size Range
		Fe	Fe	P	SiO <sub>2</sub>	Mn	Al <sub>2</sub> O <sub>3</sub>	CaO	MgO	S
<b>Newfoundland</b>										
Iron Ore Company of Canada,										
Carol Operation	9,721,210	63.93	64.98	0.009	5.79	0.15	0.36	...	...	...
Carol Pellets	3,060,159	62.95	65.34	0.009	5.46	0.14	0.25	...	...	1.61
Carol Concentrate	12,781,359	63.70	65.07	0.009	5.72	0.14	0.33	...	...	3.65
Total Carol Operation										2.10
<b>Wabush Mines</b>										
Pellets	5,371,475	64.14	65.66	...	2.90	1.88	...	...	...	2.31
Chips	19,873	62.97	65.76	...	3.04	1.63	...	...	...	2.44
Concentrate	45,862	64.19	65.85	...	2.28	1.72	...	...	...	2.53
Total Wabush Mines	5,437,210	64.13	65.66	...	2.90	1.88	...	...	...	2.31
<b>Quebec-Labrador</b>										
Iron Ore Company of Canada,										
Schefferville Direct Shipping Ore										
A. Schefferville Direct Shipping Ore	3,161,440	53.12	58.85	0.099	8.94	1.21	1.16	...	...	9.74
Quebec										
Non-Bessemer										
Labrador										
Non-Dessemer	4,015,506	55.07	60.59	0.062	8.20	0.18	1.50	...	...	9.11
Total Schefferville Direct										
Shipping Ore	7,176,946	54.21	59.83	0.078	8.52	0.63	1.35	...	...	9.39
B. Sept-Îles Operation*										
Quebec										
Sept-Îles Pellets	266,740	59.22	60.68	0.049	6.95	0.52	1.15	...	...	2.41
Sept-Îles Concentrate	15,814	53.39	58.55	0.053	7.22	0.67	1.02	...	...	8.82
Labrador										
Sept-Îles Pellets	105,750	67.37	69.28	0.057	7.93	0.60	1.31	...	...	2.75
Sept-Îles Concentrate	6,269	60.74	67.52	0.061	8.33	0.77	1.18	...	...	10.04
Total Sept-Îles Operation	394,573	61.19	63.01	0.053	7.46	0.57	1.22	...	...	2.88
Quebec Cartier Mining Company										
Concentrate	8,805,839	64.20	65.85	...	5.00	...	0.75	...	...	2.6
Hilton Mines, Ltd.										-10 mesh
Hilton Pellets	868,837	67.116	67.230	0.006	1.96	0.078	0.28	0.22	1.38	0.005
Hilton Chips	865	63.252	66.930	0.007	2.15	0.076	0.28	0.24	1.31	0.009
Hilton Media	538	61.428	66.937	0.005	2.12	0.063	0.22	0.20	1.24	0.209
Total Hilton Mines	870,240	67.109	67.230	0.006	1.96	0.078	0.28	0.22	1.38	0.005



Table 10 (cont'd)

	Shipments (long wet tons)	Dry Analysis						Loss by Ignition	Moisture	Size Range	
		Natural Fe	Fe	P	SiO <sub>2</sub>	Mn	Al <sub>2</sub> O <sub>3</sub>	CaO	MgO	S	
Pellet Feed	495, 65	63.35	69.62	0.01	1.44	...	0.48	...	0.24	...	9.0 80% greater than 44 microns, remainder passing 1,680 microns
Total Wesfrob	956, 674	60.61	65.22	0.01	3.63	...	0.94	...	0.63	...	7.3 80% less than 44 microns

\* Treat ore mined in Quebec and Labrador is concentrated and pelletized at Sept-Îles.

† Gain on ignition.

TABLE 11  
Canadian Consumption of Iron Bearing Materials at Iron-Steel Plants,<sup>1</sup> 1973

	In Sinter Plants <sup>2</sup>	In Pig Iron Furnaces	In Steel Furnaces	Total in Furnaces
(long tons)				
IRON ORE				
Crude and concentrates	338,360	504,021	45,822	549,843
Pellets	218,384	9,999,265	113,552	10,112,817
Sinter from mines	48,530	1,975,096	—	1,975,096
Sub Total	605,274	12,478,382	159,374	12,637,756
Sinter produced at Steel Plant	—	1,129,222 <sup>3</sup>	—	1,129,222
Total	605,274	13,607,604	159,374	13,766,978
% Fe	59.09	61.88	66.57	61.93
OTHER IRON-BEARING MATERIALS				
Flue dust	183,939	—	—	—
Scale, reduced pellets, etc.	350,165	415,814	297	416,111
Total	534,104	415,814	297	416,111
% Fe	49.25	36.43	60.01	36.45

Source: Company data supplied to Mineral Development Sector.

1 All integrated producers; excludes Quebec Iron and Titanium Corp; 2 Sinter plant located at steel works consume new iron ore "screenings" as well as other iron bearing materials; 3 Sinter produced mainly from 605,274 tons of "new iron ore" and 534,104 tons of other iron bearing materials;

4 Including any sintered iron bearing materials. Total iron ore consumption of "new iron ore" is an estimated 13,243 million tons, comprising 12,638 million tons of iron ore and, neglecting losses or gains in weight due to sintering, 0.605 million tons of iron ore fines.

- Nil.



1974 STATISTICAL REVIEW,

BY COMPANY



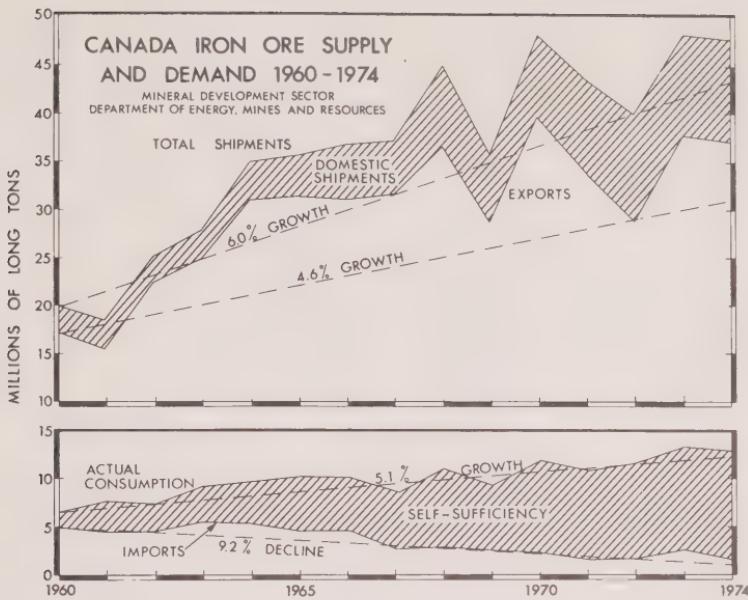


Figure 2

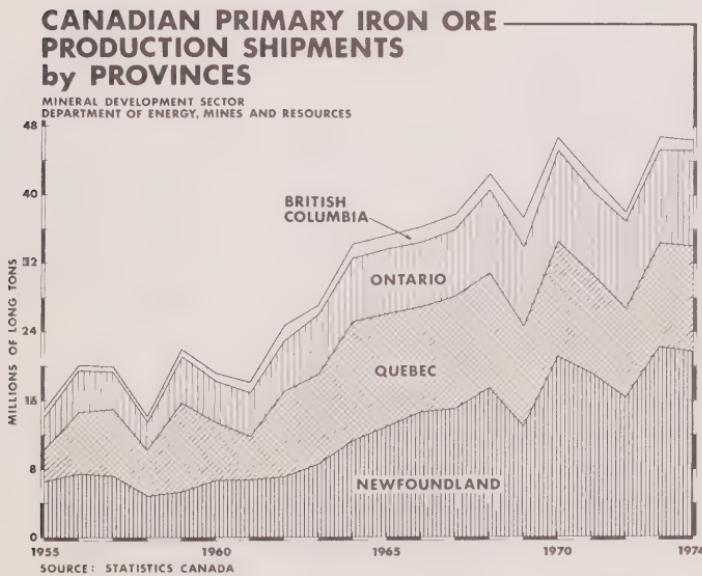


Figure 3

TABLE 12  
CANADA, IRON ORE PRODUCERS, 1973 AND 1974

Company and Property Location	Participating Companies	Material Mined and/or Treated 1974 (% Fe natural)	Product Shipped 1974 (% Fe dry/wet)	Shipments 1973 ('000 wet long tons)	Shipments 1974 ('000 wet long tons)
Adams Mine: Boston Twp., near Kirkland Lake, Ont.	Dominion Foundries and Steel, Ltd.; managed by Cliffs of Canada Limited, a wholly-owned subsidiary of The Cleveland-Cliffs Iron Company	Magnetite from open-pit mine (21)	Pellets (66/65)	1, 174	1, 142
Algoma Ore Division of The Algoma Steel Corp., Ltd.; mines and sinter plant near Wawa, Ont.	Wholly owned	Siderite from open-pit and underground mine (33)	Siderite sinter (48/48)	2, 046	2, 077 <sup>1</sup>
Caland Ore Co. Ltd.; east arm of Steep Rock Lake, near Atikokan, Ont.	Inland Steel Co.	Hematite and Goethite from open-pit mine (54)	Pellets (64/64) Concentrate (59/56) Direct Shipping (60/55) <sup>2</sup>	1, 178 928 —	1, 034 930
Griffith Mine, The; Bruce Lake, 35 miles south of Red Lake, Ont.	The Steel Co. of Canada, Ltd.; managed by Pickands Mather & Co.	Magnetite from open-pit mine (23)	Pellets (67/67)	1, 506	1, 569
Hilton Mines, Ltd., near Shawville, Quebec, 40 miles NW of Ottawa	The Steel Co. of Canada Ltd., 50%; Jones & Laughlin Steel Corp., 25%; Pickands Mather & Co. (managing agent), 25%	Magnetite from open-pit mine (22)	Pellets (67/67)	870	930
Iron Ore Company of Canada 1. Schefferville, Quebec- Labrador operation	Labrador Mining and Ex- ploration Company Ltd., 4.73%; Hollinger Mines Ltd., 10.17%; The Hanna Mining Co. (managing agent), 26.37%;	Hematite-geoethite-limonite from open-pit mines (54)	Direct-shipping ore (50/54)	7, 211	6, 568

2. Carol Lake, Labrador operation	Bethlehem Steel Corp. 18.80%; Armco Steel Corp., 5.87%; Lykes-Youngstown Corp., 5.87%;	Specular hematite and magnetite from open-pit mines (39)	Pellets (64/64) Conc. (63/62)	9,721 3,060
3. Sept-Iles, Que., <sup>3</sup> Pellet operation	National Steel Corp. of Canada Limited, 17.62%; Republic Steel Corp., 5.87%; Wheeling-Pittsburgh Steel Corp., 4.70%;	Hematite-goethite-limonite from open-pit mines, Scheferville area Treat-Ore (50)	Pellets (63/61) Conc. (61/59)	372 22
Marmoraton Mining Co., Division of Bethlehem Chile Iron Mines, Company, near Narmora, Ont.	Bethlehem Steel Corp.	Magnetite from open-pit mine (43)	Pellets (65/65)	481
National Steel Corporation of Canada, Ltd., Moose Mountain Mine; Sudbury area, 20 miles north of Capreol, Ont.	National Steel Corp. of Canada Limited (The Hanna Mining Co. is the managing agent)	Magnetite from open-pit mine (34)	Pellets (63/62)	725
Quebec Cartier Mining Company; Cagnon, Quebec	United States Steel Corp.	Specular hematite from open-pit mine (35)	Specular hematite 8,805 conc. (66/64)	686 8,450
Sherman Mine; near Temagami, Ont.	Dominion Foundries and Steel, Limited, 90% Tetapaga Mining Company (wholly-owned subsidiary of The Cleveland-Cliffs Iron Company), 10%. The operation and management of the mine is by Cliffs of Canada Limited, also a wholly-owned subsidiary of The Cleveland-Cliffs Iron Company	Magnetite from open-pit mines (22)	Pellets (66/65)	1,305 1,029

TABLE 12 (cont'd)

Company and Property Location	Participating Companies	Material Mined and/or Treated		Product Shipped		Shipments	
		1974 (% Fe natural)	1974 (% Fe natural)	1974 (% Fe dry/wet)	1974 (% Fe dry/wet)	1973 ('000 wet long tons)	1974 ('000 wet long tons)
Steep Rock Iron Mines Ltd. ; Steep Rock Lake, N. of Atikokan, Ont.	Publicly-owned company	Hematite-goethite from open-pit mine (50)	Magnetite and chalcopyrite from underground mine (31)	Conc. (58/54) Pellets (62/62)	9 1,417	9 1,341	12
Texada Mines Ltd. ; Texada Island, B.C.	Kaiser Aluminum and Chemical Corp.	Magnetite and chalcopyrite from underground mine (31)	Magnetite concen- trate (64/60)	Magnetite concen- trate (64/60)	486	326	
Wabush Mines; Scully Mine includes mine and concentrator at Wabush, Labrador; Pointe Noire Division includes pel- letizing plant at Pointe Noire, Que.	The Steel Co. of Canada Ltd., 25.6%; Dominion Foundries and Steel, Ltd., 16.4%; Youngstown Sheet and Tube Company, 15.6%; Inland Steel Co., 10.2%; Interlake, Inc., 10.2%; Wheeling-Pittsburgh Steel Corp., 10.2%; Finsider of Italy, 6.6%; and Pickands Mather & Co., (managing agent), 5.2%	Specular hematite and some magnetite from open-pit mine (35)	Pellets (66/64) Conc. (66/64)	Pellets (66/64) Conc. (66/64)	5,371 66	5,445 66	
Wesfrob Mines Limited; Tasu Harbour, Moresby Is., Queen Charlotte Is., B.C.	Falconbridge Nickel Mines Limited	Magnetite and chalcopyrite from open-pit mines (40)	Pellet-feed con- centrate (69/63)	Pellet-feed con- centrate (61/58)	496	617	
Byproduct Producers	The International Nickel Co. of Canada, Ltd. ; Copper Cliff, Ont.	Publicly-owned company	Pyrrhotite flotation concentrates (57) treated	Pellets (66/65)	624	598	

Quebec Iron and Titanium Corp.; mine at Lac Tio, Que.; electric smelter at Sorel, Quebec	Kennecott Copper Corp.; Gulf & Western Industries Inc. (The New Jersey Zinc Co.)	Ilmenite-hematite ore (40% Fe, 35% TiO <sub>2</sub> ) from open-pit mine at Lac Tio, beneficiated and calcined at Sorel	Ilmenite calcine electric smelted to TiO <sub>2</sub> slag and various grades of desulphurized pig iron or remelt iron	579 <sup>4</sup>	553 <sup>4</sup>
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Sources: Company reports, personal communication.

1 Includes 80,832 tons of regular sinter; 1,993,623 tons of superfluxed sinter; 2,227 tons of crude ore shipped as food supplement to livestock industry.

2 Excludes 115,084 tons of direct shipping ore sent to Steep Rock Iron Mines Ltd.

3 Commenced operations in 1973.

4 Pig Iron.  
- Nil.

TABLE 13  
CRUDE IRON ORE MINED IN CANADA, BY VARIETY AND GRADE, 1974

	Hematite		Magnetite		Siderite	
	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.
<b>Newfoundland</b>						
Iron Ore Company of Canada	32,663,400	38.60	—	—	—	—
Carol Division	17,335,519	34.73	—	—	—	—
Wabush Mines			—	—	—	—
Labrador-Quebec			—	—	—	—
Iron Ore Company of Canada	7,206,320 <sup>1</sup>	54.12	—	—	—	—
(Schefferville)	4,496,210 <sup>2</sup>	50.40	—	—	—	—
Quebec	—	—	2,969,140	22.02	—	—
Hilton Mines, Ltd.	—	—	—	—	—	—
Quebec Cartier Mining Company	17,748,787	34.80	—	—	—	—
Ontario	—	—	—	—	—	—
Adams Mine	—	—	4,249,474	21.06	—	—
Algoma Ore Division	—	—	—	—	3,146,111	33.0
Caledon Ore Co.	2,284,049	54.00	—	—	—	—
Griffith Mine, The	—	—	5,569,351	22.76	—	—
Marmoraton Mining Co.	—	—	887,918 <sup>3</sup>	43.03 <sup>4</sup>	—	—
Moose Mountain Mine	—	—	1,660,684	34.02	—	—
(National Steel)					—	—
Sherman Mine	—	—	4,219,853	22.47	—	—
Steep Rock Iron Mines	1,936,457	50.28	—	—	—	—
British Columbia	—	—	—	—	—	—
Texada Mines Ltd.	—	—	848,577	30.80	—	—
Wesfrob Mines Limited	—	—	1,859,952	39.77	—	—
Total	83,670,742	39.65	22,264,949	25.63	3,146,111	33.0

Source: Data supplied to Mineral Development Sector by companies.

<sup>1</sup> Includes 166,589 tons of manganeseiferous ore.

<sup>2</sup> Treat ore for Sept-Îles Division concentrator and pelletizing operations.

<sup>3</sup> Cobber product.

<sup>4</sup> Grade of cobber product.

— Nil.

TABLE 14  
CRUDE IRON ORE MINED IN CANADA, BY MINING METHOD, 1974

	Open Pit		Underground		Long Tons	Total
	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.		
<b>Newfoundland</b>						
Iron Ore Company of Canada	32, 663, 400	38. 60			32, 663, 400	38. 60
Carol Division	17, 335, 519	34. 73			17, 335, 519	34. 73
Wabush Mines						
Labrador Quebec						
Iron Ore Company of Canada (Schefferville)	7, 206, 320 <sup>1</sup>	54. 12 <sup>1</sup>			7, 206, 320	54. 12
	4, 496, 210 <sup>2</sup>	50. 40 <sup>1</sup>			4, 496, 210	50. 40
<b>Quebec</b>						
Hilton Mines, Ltd.	2, 969, 140	22. 02			2, 969, 140	22. 02
Quebec Cartier Mining Company	17, 748, 787	34. 80			17, 748, 787	34. 80
Ontario						
Adams Mine	4, 249, 474	21. 06			4, 249, 474	21. 06
Algoma Ore Division			3, 146, 111		3, 146, 111	
Caland Ore Co. <sup>3</sup>	2, 284, 049	54. 00			2, 284, 049	54. 00
Griffith Mine, The	5, 569, 351	22. 76			5, 569, 351	22. 76
Marmaraton Mining Co.	887, 918	43. 03			887, 918	43. 03
Moose Mountain Mine (National Steel)	1, 660, 684	34. 02			1, 660, 684	34. 02
Sherman Mine	4, 219, 853	22. 47			4, 219, 853	22. 47
Steep Rock Iron Mines	1, 936, 457	50. 28	—	—	1, 936, 457	50. 28
British Columbia						
Texada Mines Ltd.	26, 663	30. 80 <sup>1</sup>			30. 80 <sup>1</sup>	30. 80 <sup>1</sup>
Westfrob Mines Limited	1, 859, 352	39. 77			1, 859, 352	39. 77
Total	105, 113, 777	36. 75	3, 968, 025		32. 54	109, 081, 802
						36. 60

Source: Data supplied to Mineral Development Sector.

<sup>1</sup> Analysis of shipments; <sup>2</sup> Treat ore for Sept-Iles Division concentrator and pelletizing plant; <sup>3</sup> Direct shipping ore included in Steep Rock Iron Mines Ltd.  
— Nil; <sup>e</sup> Estimated.

TABLE 15  
DISPOSITION OF CRUDE IRON ORE MINED IN CANADA, 1974

	For Direct Shipping		To Concentration Plant		Plant		Total Long Tons
	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	
Newfoundland							
Iron Ore Company of Canada	-	-	-	-	32,663	400	32,663,400
Carol Division	-	-	-	-	17,335	519	17,335,519
Wabush Mines	-	-	-	-	34.73	-	34.73
Labrador-Quebec							
Iron Ore Company of Canada	7,206	320	54.12	-	-	-	7,206,320
1. Schefferville Division	-	-	-	-	4,496	210	4,496,210
2. Sept-Îles Division	-	-	-	-	50.40	-	50.40
Quebec							
Hilton Mines, Ltd.	-	-	-	-	2,969	140	22.02
Quebec Cartier Mining Company	-	-	17,748	787	34.80	-	2,969,140
Ontario							
Adams Mine	-	-	-	-	4,249	474	4,249,474
Algoa Ore Division	2,227	34.5	-	-	3,143	384	3,146,111
Caland Ore Co. 2	-	-	-	-	2,168	965	2,168,965
Griffith Mine, The	-	-	-	-	5,569	351	5,569,351
Marmarion Mining Co.	-	-	-	-	887	918	887,918
Moose Mountain Mine	-	-	-	-	1,660	684	1,660,684
(National Steel)	-	-	-	-	4,219	853	4,219,853
Sherman Mine	12,283	49.24	599,744	44.30	1,439	514	53.07
Steep Rock Iron Mines	-	-	848,577	30.80	-	-	848,577
British Columbia	-	-	1,859,952	39.77	-	-	1,859,952
Texas Mines Ltd.	-	-	-	-	-	-	-
Wesfrob Mines Limited	-	-	-	-	-	-	-
Total	7,220	830	54.11	21,057	060	35.35	80,803,912
						35.37	109,081,802
							36.61

Source: Data supplied to Mineral Development Sector by companies.

1 Treat ore mined at Schefferville; 2 Excluding an estimated 199,384 tons shipped to Steep Rock Iron Mines Ltd.; 3 Cobber product; 4 Grade of cobber product; 5 Crude ore fed directly to agglomerating plant. Includes a direct-shipping ore from Caland.

e Estimated; - Nil.

TABLE 16  
USABLE IRON ORE PRODUCED IN CANADA, BY TYPE OF PRODUCT, 1974

	Direct	Shipping	Concentrates		Agglomerates		Total
			Long Tons	% Fe Nat.	Long Tons	% Fe Nat.	
<b>Newfoundland</b>							
Iron Ore Company of Canada	-	-	4,761,047 <sup>1</sup>	61.80	7,968,719	64.70	12,729,766
Carrol Division	-	-	-	-	5,762,792	64.01	5,762,792
Wabush Mines	-	-	-	-	-	-	63.62
Labrador-Quebec	-	-	-	-	-	-	64.01
<b>Iron Ore Company of Canada</b>							
1. Schefferville Division	7,206,320	54,122	-	-	-	-	7,206,320
2. Sept-Îles Division	-	-	-	-	1,999,074	61.50	1,999,074
<b>Quebec</b>							
Hilton Mines, Ltd.	-	-	8,547,548	64.05	891,302	66.56	891,302
Quebec Cartier Mining Company	-	-	-	-	-	-	8,547,548
<b>Ontario</b>							
Adams Mine	-	-	-	-	1,134,687	65.15	1,134,687
Algoma Ore Division	2,227	34.5	-	-	2,059,458	47.90	2,061,685
Caland Ore Co.	-	-	952,262	56.59 <sup>e</sup>	999,451	63.54 <sup>d</sup>	999,451
Griffith Mine, The	-	-	-	-	1,516,760	66.71	1,516,760
Marmaraton Mining Co.	-	-	-	-	502,456	65.50	502,456
Moose Mountain Mine	-	-	-	-	679,208	62.37	679,208
(National Steel)	-	-	-	-	-	-	-
Sherman Mine	-	-	-	-	1,028,854	65.21	1,028,854
Steep Rock Iron Mines	12,283	49.24	-	-	1,348,287	62.15	1,360,570
British Columbia Ltd.	-	-	-	-	-	-	-
Texada Mines Ltd.	-	-	325,663	59.81	-	-	325,663
Wesfrob Mines Limited	-	-	919,599	65.77	-	-	919,599
<b>Total Iron Ore</b>							
Byproduct Iron Ore	-	-	-	-	-	-	-
Inco (Copper Cliff, Ont.)	-	-	-	-	-	-	-
Total Usable Iron ore	-	-	-	-	569,000	66.40 <sup>e</sup>	569,000
Produced	7,220,830	54.11	15,506,119	62.91	26,460,048	63.04	49,186,997
Source: Data supplied to Mineral Development Sector by companies.							61.69
1 Difference between concentrate produced and concentrate sent to pellet plant; 2 Analysis of shipments from Sept-Iles; 3 Analysis of shipments;							
4 Dry weight; e Estimated; - Nil.							

TABLE 17  
WASTE/ORE AND CONCENTRATION RATIOS AT CANADIAN IRON ORE MINES, 1974

	Open Pit Waste	Under-Ground Waste	Iron Ore Mined	Usable Iron Ore Produced	Waste/Ore Ratio	Waste/Usable Ore Ratio	Concentration Ratio	Fe Recovery
Newfoundland								
Iron Ore Company of Canada	9,358,226 <sup>1</sup>	-	32,663,400	12,729,766 <sup>2</sup>	0.287	0.735	1.557	0.613
Carol Division	5,511,354	-	17,335,519	5,762,792	0.317	0.956	3.008	
Wabush Mines								
Labrador Quebec								
Iron Ore Company of Canada	25,272,281	-	$\left\{ \begin{array}{l} 7,206,320 \\ 4,496,210^3 \end{array} \right\}$		2,160	2,745	1.000	1.000
Schefferville			$\left\{ \begin{array}{l} 7,206,320 \\ 1,999,074^2 \end{array} \right\}$			2,249	0.694	
Quebec								
Hilton Mines, Ltd.	1,518,369	-	2,969,140	891,302	0.511	1.704	3.331	0.948
Quebec Carter Mining Company	1,734,000 <sup>1</sup>	-	17,748,787	8,547,548	0.098	0.203	2.077	0.886
Ontario								
Adams Mine	2,368,778	-	4,249,474	1,134,687	0.557	2.088	3.745	0.826
Algomine Ore Division	-	8,487	3,146,111	2,061,685	0.003	0.004	1.602	0.906 <sup>4</sup>
Caland Ore Co.	5,694,116	-	2,284,049	1,951,713	2,493	2,917	1,170 <sup>5</sup>	0.952 <sup>6</sup>
Griffith Mine, The	6,420,165	-	5,569,351	1,516,760	1.153	4,233	3,672	0.798
Marmaraton Mining Co.	2,589,193	-	1,775,336	502,456	1.458	5,153	3,534	0.860 <sup>e</sup>
Moose Mountain Mine	566,500	-	1,600,684	679,208	0.354	0.834	2,357	0.778
(National Steel)								
Sherman Mine	4,866,306	-	4,219,853	1,028,854	1.153	4,730	4,102	0.708
Steep Rock Iron Mines	7,070,282	-	1,620,922 <sup>7</sup>	1,360,570	4,362	5,197	1,191	0.867
British Columbia								
Texada Mines Ltd.	13,018	675	848,577	325,663	0.015	0.040	2,606	0.745
Wesfrob Mines Limited	634,334 <sup>1</sup>	-	1,859,932	919,599	0.690	0.690	2,023	0.818

Source: Data supplied to Mineral Development Sector by companies.

<sup>1</sup> Calculated from data supplied by companies in cubic yards by using a factor of 2 long tons equals 1 cubic yard; <sup>2</sup> Pellets and concentrate;

<sup>3</sup> Schefferville "frag. ore", <sup>4</sup> Includes 156,724 tons of hematite from the Mesabi Range. <sup>5</sup> for pellets; <sup>6</sup> Estimated tonnage of cobber product multiplied by a factor of 2; <sup>7</sup> Including direct-shipping ore from Caland.

<sup>e</sup> Estimated; - Nil.

TABLE 18  
USABLE IRON ORE SHIPPED BY CANADIAN PRODUCERS,  
BY TYPE OF PRODUCT, 1974

source: Data supplied to Mineral Development Sector by companies. Includes 2,047 tons of chips grading 58.15% Fe. <sup>2</sup> Dry weight. <sup>e</sup> Estimated. - Nil.

TABLE 19  
USABLE IRON ORE SHIPPED BY CANADIAN PRODUCERS, BY  
DESTINATION 1974

Iron Ore Producers	All Rail			United States			Great Lakes			Other Ports			All Rail			Britain			ECSC			Japan			Other			Total					
	Canada	Other	Great Lakes	United States	Other Ports	All Rail	Great Lakes	United States	Other	All Rail	Great Lakes	United States	Other	All Rail	Great Lakes	United States	Other	All Rail	Great Lakes	United States	Other	All Rail	Great Lakes	United States	Other	All Rail	Great Lakes	United States	Other	All Rail			
Newfoundland																																	
Iron Ore Co. of Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Carol Div. (conc.)	391,430	2,961,640	2,140,380	-	-	-	607,356	1,671,980	2,163,790	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,493,126						
Carol Div. (pellets)							425,550	1,144,810	101,650	406,730	7,572,200																						
Wabush Mines	2,510,041	1,602,783	441,081	-	-	-	553,771	-	-	-	-	-	-	-	-	-	-	337,798 <sup>1</sup>	-	-	-	-	-	-	-	-	5,445,474						
(pellets)				18,389																													
Labrador-Quebec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,389				
Iron Ore Co. of Canada																																	
1. Schefferville direct- shipping ore	166,901	1,663,333	2,233,671	-	-	-	903,018	1,395,467	185,232	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,567,422					
2. Sept-Îles pellets	304,500	1,365,410	215,530	-	-	-	402,602	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,885,440					
Quebec																																	
Hilton Mines, Ltd.	527,850	-	-	-	-	-	1,127	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	930,452					
(pellets)																															1,127		
Quebec Cartier Mining Company	-	-	2,019,000	136,000	-	-	2,259,000	2,862,000	697,000	477,000	477,000	8,450,000																					
Ontario																																	
Adams Mine (pellets)	907,843	-	80,832	-	-	-	234,478	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,142,321					
Algoma Ore Division	1,993,623	-	-	-	-	-	2,227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,076,682					
Caland Ore Co.																																	
Direct shipping	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	930,091				
Concentrates	-	-	-	-	-	-	930,091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,034,446					
Pellets	-	-	-	1,034,446	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,563,755				
Griffith Mine, The	-	-	1,568,755	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,018 <sup>2</sup>				
(pellets)																																	
Marmaraton Mining Co.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	520,281				
(pellets)																																	
Moose Mountain Mine -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	686,352				
National Steel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,028,854				
Sherman Mine (pellets)	1,028,854	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,340,850				
Steep Rock Iron Mines Ltd.	-	1,109,059	231,791	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12,283				
(pellets)																																	
(conc.)	12,283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,369	272,193			
British Columbia																																	
Texada Mines Ltd. (conc.)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	325,663				
Westrob Mines Ltd. (conc.)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	740,434	14,020 <sup>4</sup>	1,030,016		
Byproduct Iron Ore Producers																																	
Inco, Copper Cliff, Ont.																																	
(pellets)																																	
Total Usable Iron																																	
Ore Shipped	4,471,070	6,134,887	13,526,876	5,438,865	7,62,439	4,748,695	7,074,257	4,213,612	1,237,723	47,608,424																							

Source: Data supplied to Mineral Development Sector by companies.  
 1 Italy  
 2 Pellet fines to U.S.A.  
 3 Ballast  
 4 Australia  
 - Nil.

TABLE 20  
STOCKS OF USABLE IRON ORE AT MINES AND SHIPPING PORTS  
IN CANADA, 1973-74

(long tons)

	December 31, 1973	December 31 1974	Change in Stocks
<b>Newfoundland</b>			
Iron Ore Company of Canada			
At Sept-Iles			
Concentrates	81,390 <sup>1</sup>	161,577	+80,187
Pellets - Carol Lake	230,091	440,997	+210,906
- Sept-Iles	199,310	312,944	+113,634
At Labrador City			
Concentrates	190,433	357,563	+167,130
Pellets	125,517	311,130	+185,613
Wabush Mines	255,882	573,200	+317,318
Wabana Mines <sup>2</sup>	55,000	55,000	-
<b>Labrador-Quebec</b>			
Iron Ore Company of Canada			
Schefferville (at Sept-Iles)	2,866,391	3,496,197	+629,806
<b>Quebec</b>			
Hilton Mines, Ltd.	119,739	79,370	-40,369
Quebec Cartier Mining Company	888,012	992,554	+104,542
<b>Ontario</b>			
Adams Mine	151,929	164,153	+12,224
Algoma Ore Division	84,112	69,115	-14,997
Caland Ore Co. Ltd.	1,292,203	1,193,951	-98,252
Griffith Mine, The <sup>3</sup>	73,451	21,456	-51,995
Marmoraton Mining Co.	28,167	11,584	-16,583
Moose Mountain Mine (National Steel)	35,843	40,636	+4,793
Sherman Mine <sup>4</sup>	2,705	3,877	+1,172
Steep Rock Iron Mines Ltd.	944,103	1,539,019	+594,916
<b>British Columbia</b>			
Texada Mines Ltd.	173,381	143,505	-29,876
Wesfrob Mines Limited	115,097	88,315	-26,782
<b>Total</b>	<b>7,912,756</b>	<b>10,056,143</b>	<b>+2,143,387</b>

<sup>1</sup> From Carol operation.

<sup>2</sup> No ore shipped 1970-74.

<sup>3</sup> Excluding stocks at Thunder Bay.

<sup>4</sup> Stockpile as of December 31, 1973 plus the difference between production and shipments.

TABLE 21  
ANALYSES OF CANADIAN IRON ORE SHIPMENTS IN 1974



Table 21 (cont'd)

	Shipments (long wet tons)	Natural Fe	Dry Analysis						Loss by Ignition	Moisture	Size Range
			Fe	P	SiO <sub>2</sub>	Mn	Al <sub>2</sub> O <sub>3</sub>	CaO			
<b>British Columbia</b>											
Texada Mines Ltd.	325,663	59.81	63.50	0.010	5.35	0.15	0.86	2.53	0.54	0.901	-
Magnetic concentrate											5.8
Wesfrob Mines Limited	413,384	60.82	60.9	0.15	1.40	-	6.60	-	1.15	-	<308-149 micron
Sinter Feed											1008-4000 micron
Pellet Feed	616,632	69.64	69.7	0.006	1.53	-	0.47	-	0.30	-	808 passing 44 micron remainder
Total Wesfrob	1,030,016	66.10	66.17	0.064	1.48	2.93		0.64	7.4		

\* Treat ore mined in Quebec and Labrador is concentrated and pelletized at Sept-Îles.

1 Gain on ignition.

TABLE 22  
Canadian Consumption of Iron Bearing Materials at Iron-Steel Plants,<sup>1</sup> 1974

	In Sinter Plants	In Direct Reduction Plants	In Iron and Steel Furnaces		
			Pig Iron Furnaces	Steel Furnaces	Total in Furnaces
(Long tons)					
Iron Ore					
Crude and concentrates	221,183	—	405,100	58,036	463,136
Pellets	137,843	364,432	9,871,112	68,492	9,939,604
Sinter	48,103	—	2,066,520	—	2,066,520
Sub-total	407,129	364,432	12,342,732	126,528	12,469,260
Sinter Produced at Steel plant	—	—	1,164,579 <sup>3</sup>	—	1,164,579
Total	407,129	364,432	13,507,311	126,528	13,633,839 <sup>4</sup>
% Fe	58.08	68.00 <sup>e</sup>	61.24	65.30	61.28
Other Iron-bearing Materials					
Flue Dust	190,302	—	—	—	—
Scale, reduced pellets, etc.	574,581	—	349,818	311	350,129
Total	764,883	—	349,818	311	350,129
% Fe	51.56	—	31.01	60.00	31.04

Source: Company data supplied to Mineral Development Sector.

<sup>1</sup> All integrated producers; excludes Quebec Iron and Titanium Corp.; <sup>2</sup> Sinter plant located at steel works consume new iron ore "screenings" as well as other iron-bearing materials; <sup>3</sup> Sinter produced mainly from 407,129 tons of "new iron ore" and 764,883 tons of other iron-bearing materials; <sup>4</sup> Including any sintered iron-bearing materials. Total iron ore consumption of "new iron ore" is an estimated 13,240 million tons, comprising 12,469 million tons of iron ore in furnaces, 0.364 million tons of pellets in direct reduction plants and 0.407 million tons of iron ore fines in sinter plants.

<sup>5</sup> Includes pellets and crude ore.  
— Nil; <sup>e</sup> Estimated.















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